

Birds

of

Saurashtra

India

by

R. S. Dharmakumaran
F.Z.S., M.B.O.U.

Birds of Saurashtra

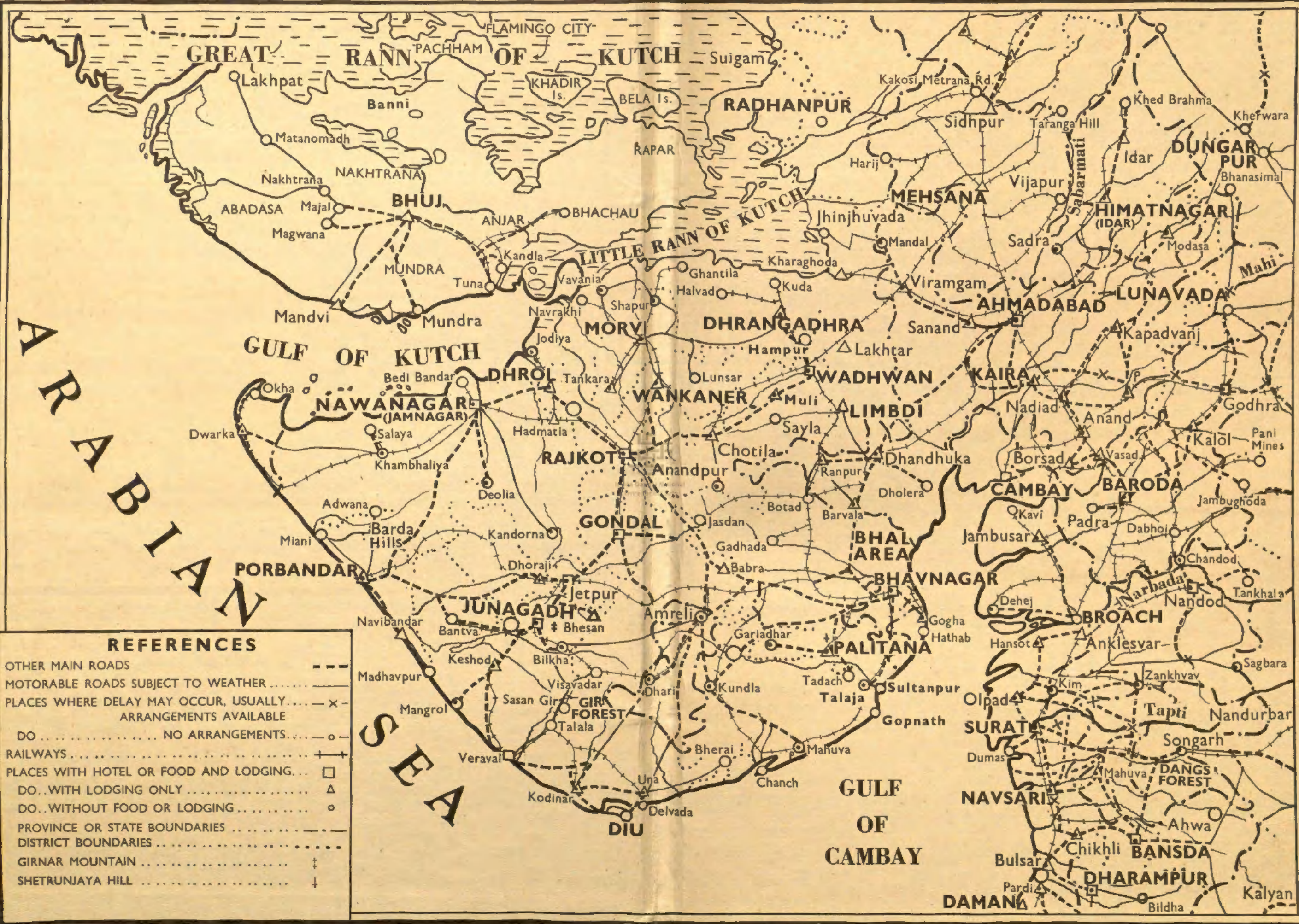
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Indra Gandhi National
Centre for the Arts



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With Additional Notes on
THE BIRDS OF KUTCH AND GUJERAT

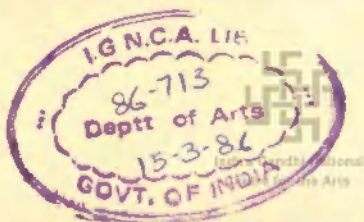


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DEDICATED

to

My Parents

His Highness The Maharaja Saheb

Sir Bhavsinhji, K.C.S.I.

and

Her Highness The Maharani Sahiba

Nandkunverba, C.I.E.

of

Bhavnagar



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- The Darbar Saheb of Jasdan.
- H.H. The Nawab Saheb of Junagadh.
- H.H. The Maharao of Kutch.
- H.H. The Thakore Saheb of Limbdi.
- The Sheikh Saheb of Mangrol.
- H.H. The Maharaja Saheb of Morvi.
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descriptions. Also I am indebted to Mr. W. B. Alexander for permitting me to use extracts from his " Birds of the Ocean ".

My thanks are also due to Shri Somalal Shah for his excellent paintings most of which were done from live specimens or those collected in the field. He is perhaps the first Indian artist of repute doing work in this field and I wish him every success for the future. His paintings do add greatly to the value of this book.

Also I must not forget to express my gratitude to the Bombay Natural History Society and Mr. Humayun Abdulali, Mr. V. K. Chari, Dr. Biswas and Mr. Gabriel for valuable information and for the use of specimens from the Society's collection ; and to the Times of India Press and, in particular, to Mr. K. C. Raman, the Production Manager, and Messrs. Moulton, Warbrick, Pinto and Fritz for having this book printed so handsomely and excellently.

Finally, I have to acknowledge with gratitude the information about Bird Life in general which I have continually received from the many Shikaris of Bhavnagar State.



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FOREWORD

By

MAJOR-GENERAL H. WILLIAMS, C.B., C.B.E.

DESPITE the abundance of Bird Life and the excellent conditions under which Bird Watching is possible, there are far too few ornithologists in India. There are, however, some who can claim high distinction in this field of activity, and among them Raol Shri Dharmakumarsinhji finds an assured place.

Those who have seen his coloured films of the Lesser Florican and its different courtship displays, or have heard him discuss the identification of eagles or the migratory habits of the waders, know him to be a capable and accurate observer and one who has made the most of his abundant opportunities for bird study. And in what wonderful country, for Saurashtra has in a comparatively small territory a great variety of terrain, and it is on the route of many interesting bird migrations and its bird life has till recently suffered very little interference from man.

This is, I believe, the first authoritative record of the birds of Saurashtra. It is written in simple non-technical language and gives the results of fifteen years of careful study. The original illustrations by Shri Somalal Shah are very beautiful and give a faithful and accurate impression of the birds depicted. They are in colour, and include practically all the birds mentioned in the text.

Here the expert will find many facts of scientific interest accurately established and carefully recorded, and the novice an interesting and very readable account of most of the birds he is likely to encounter in Northern and Western India.

Bird lovers everywhere will be grateful to Raol Shri Dharmakumarsinhji for sharing with them his wide knowledge and interesting experiences of the Birds of Saurashtra.

CONTENTS

ACKNOWLEDGEMENTS	vii
FOREWORD	ix
INTRODUCTION	xxix
CHAPTER I	xxxii
CHAPTER II	xliii
CHAPTER III	xlvii

ORDER PROCELLARIIFORMES

FAMILY PROCELLARIIDAE	Page
Subfamily Procellariinae	

<i>Puffinus persicus</i> . Persian Shearwater	Appendix No. II 452
---	---------------------

Subfamily Hydrobatinae

<i>Oceanites oceanicus</i> . Wilson's Storm-Petrel	Appendix No. II 452
--	---------------------

ORDER PODICIPIFORMES

FAMILY PODICIPITIDAE

<i>Podiceps ruficollis</i> PALLAS. Little Grebe or Dabchick	1
<i>Podiceps nigricollis</i> C. L. BREHM. Black-Necked Grebe	2
<i>Podiceps cristatus</i> LINNAEUS. Great Crested Grebe	3

ORDER PELECANIFORMES

SUBORDER PHAETHONTES

FAMILY PHAETHONTIDAE

<i>Phaethon aethereus</i> . Red-Billed Tropic-Bird	Appendix No. II 452
<i>Phaethon rubricaudus</i> . Red-Tailed Tropic-Bird	Appendix No. II 453

SUBORDER FREGATAE

FAMILY FREGATIDAE

<i>Fregata andrewsi</i> . Christmas Frigate-Bird	Appendix No. II 454
<i>Fregata ariel</i> . Lesser Frigate-Bird	Appendix No. II 454

SUBORDER PELECANI

FAMILY PHALACROCORACIDAE

Subfamily Phalacrocoracinae

<i>Phalacrocorax niger</i> VIEILLOT. Little Cormorant	4
<i>Phalacrocorax carbo sinensis</i> SHAW. Indian Large Cormorant	5
<i>Phalacrocorax fuscicollis</i> STEPHENS. Indian Shag	405

Subfamily Anhinginae

<i>Anhinga anhinga melanogaster</i> PENNANT. Indian Darter or Snake Bird	7
--	---

FAMILY PELECANIDAE

<i>Pelecanus onocrotalus</i> LINNAEUS. White or Rosy Pelican	8
<i>Pelecanus philippensis</i> GMELIN. Dalmatian or Grey Pelican	11

ORDER FALCONIFORMES

SUBORDER FALCONES

FAMILY ACCIPITRIDAE

Subfamily Elaninae

<i>Elanus caeruleus vociferus</i> LATHAM. Black-Winged Kite	■
---	---

Subfamily Perninae

<i>Pernis ptilorhynchus ruficollis</i> LESSON. Crested Honey-Buzzard	13
--	----

Subfamily Milvinae

<i>Milvus migrans</i> <i>govinda</i> SYKES. Common Pariah Kite	15
<i>Milvus migrans</i> <i>lineatus</i> J. E. GRAY. Large Indian or Black-Eared Kite	16
<i>Haliastur indus</i> <i>indus</i> BODDAERT. Brahminy Kite	17

Subfamily Accipitrinae

<i>Accipiter gentilis</i> LINNAEUS. Goshawk	18
<i>Accipiter badius</i> <i>dussumieri</i> TEMMINCK. Shikra	19
<i>Accipiter nisus</i> LINNAEUS. Sparrow-Hawk	21
<i>Accipiter virgatus</i> TEMMINCK. Besra Sparrow-Hawk	405

Subfamily Buteoninae

<i>Buteo rufinus</i> CRETZSCHMAR. Long-Legged Buzzard	22
<i>Buteo hemilasius</i> TEMMINCK AND SCHLEGEL. Upland Buzzard	23
<i>Buteo vulpinus</i> GLOGER. Desert Buzzard	24
<i>Butastur teesa</i> FRANKLIN. White-Eyed Buzzard-Eagle	24
<i>Spizaetus cirrhatus</i> GMELIN. Crested Hawk-Eagle	25
<i>Hieraetus fasciatus fasciatus</i> VIEILLOT. Bonelli's Eagle	26
<i>Hieraetus pennatus</i> GMELIN. Booted Eagle	28
<i>Aquila heliaca heliaca</i> SUVIGNY. Imperial Eagle	29
<i>Aquila nipalensis</i> HODGSON. Steppe Eagle	30
<i>Aquila rapax</i> <i>vindhiana</i> FRANKLIN. Indian Tawny Eagle	32
<i>Aquila clanga</i> PALLAS. Greater Spotted Eagle	34
<i>Aquila pomarina</i> <i>hastata</i> LESSON. Lesser Spotted Eagle	36
<i>Haliaeetus leucogaster</i> GMELIN. White-Bellied Sea Eagle	36
<i>Haliaeetus leucoryphus</i> PALLAS. Pallas' Fishing Eagle	37
<i>Icthyophaga ichthyaeus</i> HORSFIELD. Grey-Headed Fishing Eagle	38

Subfamily Aegyptiinae

<i>Torgos calvus</i> SCOPOLI. Black or King Vulture	39
<i>Aegyptius monachus</i> LINNAEUS. Cinereous Vulture	41
<i>Gyps fulvus</i> HABLIZL. Fulvous or Griffon Vulture	41
<i>Gyps indicus</i> SCOPOLI. Long-Billed Vulture	42
<i>Gyps benghalensis</i> GMELIN. Common or White-Backed Vulture	43
<i>Neophron percnopterus</i> <i>ginginianus</i> LATHAM. Neophron or White Scavenger Vulture	46

Subfamily Circinae

<i>Circus macrourus</i> S. GMELIN. Pale Harrier	47
<i>Circus pygargus</i> LINNAEUS. Montagu's Harrier	48
<i>Circus cyaneus</i> <i>cyaneus</i> LINNAEUS. Hen-Harrier	49
<i>Circus aeruginosus</i> <i>aeruginosus</i> LINNAEUS. Marsh-Harrier	50

Subfamily Circaetinae

<i>Circaetus gallicus</i> GMELIN. Short-Toed Eagle	51
<i>Spilornis cheela</i> LATHAM. Indian Serpent Eagle	52

FAMILY FALCONIDAE

Subfamily Falconinae

<i>Falco peregrinus</i> TUNSTALL. Peregrine Falcon	54
<i>Falco peregrinus</i> <i>peregrinator</i> SUNDEVALL. Shahin Falcon	56
<i>Falco peregrinus</i> <i>babylonicus</i> P. L. SCLATER. Red-Capped Falcon	58
<i>Falco jugger</i> J. E. GRAY. Laggar Falcon	59
<i>Falco cherrug</i> <i>cherrug</i> J. E. GRAY. Saker Falcon or Cherrug	61
<i>Falco subbuteo</i> LINNAEUS. Hobby	62
<i>Falco severus</i> <i>rufepedoides</i> HODGSON. Indian Hobby	63
<i>Falco chicquera</i> <i>chicquera</i> DAUDIN. Red-Headed Merlin	64
<i>Falco tinnunculus</i> LINNAEUS. Kestrel	65

FAMILY PANDIONIDAE

<i>Pandion haliaetus</i> LINNAEUS. Osprey	66
---	----

ORDER CICONIIFORMES

SUBORDER ARDAE

FAMILY ARDEIDAE

Subfamily Ardeinae

<i>Ardea cinerea</i> LINNAEUS. Grey Heron	68
<i>Ardea purpurea</i> LINNAEUS. Purple Heron	70
<i>Bulorides striatus javanicus</i> HORSFIELD. Indian Little Green Heron	71
<i>Ardeola grayi</i> SYKES. Indian Pond Heron	72
<i>Bubulcus ibis coromandus</i> BODDAERT. Cattle Egret	74
<i>Egretta alba modesta</i> J. E. GRAY. Eastern Large Egret	76
<i>Egretta intermedia intermedia</i> WAGLER. Indian Smaller Egret	77
<i>Egretta gularis</i> BOSCH. Indian Reef Heron	78
<i>Egretta garzetta garzetta</i> LINNAEUS. Little Egret	79
<i>Nycticorax nycticorax nycticorax</i> LINNAEUS. Night Heron	81
<i>Ixobrychus sinensis</i> GMELIN. Yellow Bittern	406
<i>Ixobrychus cinnamomeus</i> GMELIN. Chestnut Bittern	82
<i>Dupetor flavicollis</i> GMELIN. Black Bittern	407
<i>Botaurus stellaris stellaris</i> LINNAEUS. Bittern	82

SUBORDER CICONIAE

FAMILY THRESKIORNITHIDAE

Subfamily Threskiornithinae

<i>Threskiornis melanocephalus</i> LATHAM. White Ibis	83
<i>Pseudibis papillosa</i> TEMMINCK. Indian Black Ibis	84
<i>Plegadis falcinellus falcinellus</i> LINNAEUS. Glossy Ibis	85

Subfamily Plataleinae

<i>Platalea leucorodia major</i> TEMMINCK AND SCHLEGEL. Indian Spoonbill	86
--	----

FAMILY CICONIIDAE

Subfamily Mycteriinae

<i>Ibis leucocephalus leucocephalus</i> PENNANT. Painted Stork	88
--	----

Subfamily Ciconiinae

<i>Anastomus oscitans</i> BODDAERT. Openbill Stork	90
<i>Ciconia ciconia</i> LINNAEUS. White Stork	91
<i>Ciconia episcopa</i> BODDAERT. White-Necked Stork	91
<i>Ciconia nigra</i> LINNAEUS. Black Stork	407
<i>Xenorhynchus asiaticus asiaticus</i> LATHAM. Black-Necked Stork	93
<i>Leptoptilos dubius</i> GMELIN. Adjutant Stork	408

ORDER PHOENICOPTERIFORMES

FAMILY PHOENICOPTERIDAE

<i>Phoenicopterus ruber antiquorum</i> TEMMINCK. Flamingo	94
<i>Phoenicopterus minor</i> GEOFFREY. Lesser Flamingo	96

ORDER ANSERIFORMES

FAMILY ANATIDAE

Subfamily Anserinae

<i>Anser albifrons</i> SCOPOLI. White-Fronted Goose	408
<i>Anser anser rubrirostris</i> SWINHOE. Eastern Grey Lag Goose	98
<i>Anser indicus</i> LATHAM. Bar-Headed Goose	98
<i>Cygnus columbianus jankowskii</i> ALPHERAKY. Alpheraky's Swan	409
<i>Dendrocygna javanica</i> HORSFIELD. Lesser or Common Whistling Teal	99
<i>Dendrocygna bicolor</i> VIEILLOT. Large Whistling Teal	409

Subfamily Anatinae

<i>Tadorna tadorna</i> LINNAEUS.	Sheld-Duck	101
<i>Tadorna ferruginea</i> PALLAS.	Ruddy Sheld-Duck or Brahminy Duck	101
<i>Anas platyrhynchos</i> LINNAEUS.	Mallard	103
<i>Anas poecilorhyncha poecilorhyncha</i> J. R. FORSTER.	Spotbill or Grey Duck	105
<i>Anas strepera</i> LINNAEUS.	Gadwall	106
<i>Anas penelope</i> LINNAEUS.	Wigeon	107
<i>Anas crecca crecca</i> LINNAEUS.	Common Teal	108
<i>Anas acuta acuta</i> LINNAEUS.	Pintail	109
<i>Anas querquedula</i> LINNAEUS.	Garganey Teal	110
<i>Anas clypeata</i> LINNAEUS.	Shoveler	111
<i>Anas angustirostris</i> MENETRIES.	Marbled Teal	113
<i>Anas falcata</i> GEORGI.	Bronze-Capped or Falcated Teal	410
<i>Anas formosa</i> GEORGI.	Clucking or Baikal Teal	410
<i>Netta rufina</i> PALLAS.	Red-Crested Pochard	113
<i>Aythya ferina</i> LINNAEUS.	Common Pochard or Dun-Bird	114
<i>Aythya nyroca</i> GULDENSTADT.	White-Eyed Pochard	115
<i>Aythya marila marila</i> LINNAEUS.	Scaup	116
<i>Aythya fuligula</i> LINNAEUS.	Tufted Pochard	117
<i>Nettapus coromandelianus</i> GMELIN.	Cotton Teal or Indian Pygmy Goose	117
<i>Sarkidiornis melanotos</i> PENNANT.	Nukhta or Comb Duck	118

ORDER GALLIFORMES

SUBORDER GALLI

FAMILY PHASIANIDAE

Subfamily Phasianinae

<i>Francolinus pictus</i> LINNAEUS.	Painted Partridge	120
<i>Francolinus francolinus</i> LINNAEUS.	Black Partridge or Francolin	411
<i>Francolinus pondicerianus</i> GMELIN.	Common Grey Partridge or Francolin	122
<i>Coturnix coturnix coturnix</i> LINNAEUS.	Common or Grey Quail	123
<i>Coturnix coromandelica</i> GMELIN.	Black-Breasted or Rain Quail	125
<i>Perdicula asiatica</i> LATHAM.	Jungle Bush-Quail	126
<i>Perdicula argoondah</i> SYKES.	Rock Bush-Quail	127
<i>Galloperdix spadicea</i> GMELIN.	Red Spur Fowl	411
<i>Gallus sonnerati</i> TEMMINCK.	Grey Jungle Fowl	412
<i>Pavo cristatus</i> LINNAEUS.	Common Peafowl	128

ORDER CUCULIFORMES

SUBORDER CUCULI

FAMILY CUCULIDAE

Subfamily Cuculinae

<i>Clamator jacobinus</i> BODDAERT.	Pied Crested Cuckoo	130
<i>Cuculus varius</i> VAHL.	Common Hawk-Cuckoo	132
<i>Cuculus canorus</i> LINNAEUS.	Cuckoo	134
<i>Cuculus sonnerati</i> LATHAM.	Indian Banded Bay Cuckoo	413
<i>Cuculus passerinus</i> VAHL.	Indian Plaintive Cuckoo	414
<i>Eudynamis scolopacea scolopacea</i> LINNAEUS.	Koel	135

Subfamily Centropodinae

<i>Centropus sinensis</i> STEPHENS.	Crow-Pheasant or Coucal	137
-------------------------------------	-------------------------	-----

Subfamily Phaenicophaeinae

<i>Taccocua viridirostris</i> JERDON.	Small Green-Billed Malkoha	414
<i>Taccocua leschenaulti</i> LESSON.	Sirkeer Cuckoo	138

ORDER GRUIFORMES

SUBORDER GRUES

FAMILY GRUIDAE

Subfamily Gruinae

<i>Grus grus lilfordi</i> SHARPE.	Eastern Common Crane	140
<i>Grus antigone antigone</i> LINNAEUS.	Sarus Crane	142
<i>Anthropoides virgo</i> LINNAEUS.	Demoiselle Crane	144

SUBORDER OTIDES

FAMILY OTIDIDAE

<i>Ardeotis nigriceps</i> VIGORS.	Great Indian Bustard	145
<i>Chlamydolys undulata macqueenii</i> J. E. GRAY.	Macqueen's Bustard or Houbara	148
<i>Eupodotis indica</i> J. F. MILLER.	Lesser Florican	150

SUBORDER RALLAE

FAMILY RALLIDAE

Subfamily Rallinae

<i>Rallus striatus</i> LINNAEUS.	Indian Blue-Breasted Banded Rail	145
<i>Porzana pusilla pusilla</i> PALLAS.	Eastern Baillon's Crane	153
<i>Porzana porzana porzana</i> LINNAEUS.	Spotted Crane	154
<i>Amaurornis akool</i> SYKES.	Brown Crane	154
<i>Amaurornis phoenicurus chinensis</i> BODDAERT.	White-Breasted Water Hen	156
<i>Gallinix cinerea</i> GMELIN.	Watercock or Kora	155
<i>Gallinula chloropus indica</i> BLYTH.	Indian Moorhen	157
<i>Porphyrio porphyrio poliocephalus</i> LATHAM.	Purple Moorhen	158

Subfamily Fulicinae

<i>Fulica atra atra</i> LINNAEUS.	Coot	159
-----------------------------------	----------------	-----

SUBORDER TURNICES

FAMILY TURNICIDAE

Subfamily Turnicinae

<i>Turnix sylvatica dussumieri</i> TEMMINCK.	Little Button-Quail	161
<i>Turnix tanki tanki</i> BLYTH.	Indian Button-Quail	162
<i>Turnix suscitator taigoor</i> SYKES.	Common Bustard-Quail	163

ORDER CHARADRIIFORMES

SUBORDER CHARADRII

FAMILY JACANIDAE

<i>Hydrophasianus chirurgus</i> SCOPOLI.	Pheasant-Tailed Jacana	164
<i>Metopidius indicus</i> LATHAM.	Bronze-Winged Jacana	165

FAMILY DROMADIDAE

<i>Dromas ardeola</i> PAYKULL.	Crab Plover	165
--------------------------------	-----------------------	-----

FAMILY BURHINIDAE

<i>Burhinus oedicnemus indicus</i> SALVADORI.	Indian Stone Curlew	166
<i>Burhinus recurvirostris</i> CUVIER.	Great Stone Curlew	168

FAMILY HAEMATOPODIDAE

<i>Haematopus ostralegus</i> LINNAEUS.	Oyster-Catcher	169
--	--------------------------	-----

FAMILY CHARADRIIDAE

Subfamily Charadriinae

<i>Chetusia gregaria</i> PALLAS.	Sociable Lapwing	170
<i>Chetusia leucura</i> LICHTENSTEIN.	White-Tailed Lapwing	171
<i>Hoplopterus indicus indicus</i> BODDAERT.	Red-Wattled Lapwing	172

<i>Lobipluvia malabarica</i> BONAPARTE. Yellow-Wattled Lapwing	173
<i>Pluvialis squatarola squatarola</i> LINNAEUS. Grey Plover	175
<i>Pluvialis dominica fulva</i> GMELIN. Eastern Golden Plover	175
<i>Charadrius dubius curonicus</i> GMELIN. European Little Ringed Plover	176
<i>Charadrius dubius jerdoni</i> LEGGE. Jerdon's Little Ringed Plover	177
<i>Charadrius alexandrinus</i> LINNAEUS. Kentish Plover	179
<i>Charadrius mongolus atrifrons</i> WAGLER. Lesser Sand Plover	180
<i>Charadrius leschenaulti</i> LESSON. Large Sand Plover	181

Subfamily Scolopacinae

<i>Numenius phaeopus phaeopus</i> LINNAEUS. Whimbrel	182
<i>Numenius arquata arquata</i> LINNAEUS. Curlew	183
<i>Numenius arquata lineatus</i> CUVIER. Eastern Curlew	183
<i>Limosa limosa limosa</i> LINNAEUS. Black-Tailed Godwit	185
<i>Limosa lapponica lapponica</i> LINNAEUS. Bar-Tailed Godwit	186
<i>Tringa erythropus</i> PALLAS. Dusky Redshank	186
<i>Tringa totanus</i> LINNAEUS. Redshank	187
<i>Tringa stagnatilis</i> BECHSTEIN. Marsh Sandpiper	188
<i>Tringa nebularia</i> GUNNERUS. Greenshank	189
<i>Tringa ochropus</i> LINNAEUS. Green Sandpiper	190
<i>Tringa glareola</i> LINNAEUS. Wood Sandpiper	191
<i>Tringa cinerea cinerea</i> GÜLDENSTÄDT. Western Terek Sandpiper	191
<i>Actitis hypoleucos</i> LINNAEUS. Common Sandpiper	192
<i>Arenaria interpres</i> LINNAEUS. Turnstone	193
<i>Gallinago stenura</i> BONAPARTE. Pintail Snipe	194
<i>Gallinago gallinago gallinago</i> LINNAEUS. Common or Fantail Snipe	195
<i>Gallinago minima</i> BRÜNNICH. Jack Snipe	196
<i>Scolopax rusticola</i> LINNAEUS. Woodcock	416
<i>Calidris canutus</i> . Knot	460
<i>Calidris albus</i> PALLAS. Sanderling	197
<i>Calidris minutus</i> LEISLER. Little Stint ^{ind}	198
<i>Calidris temminckii</i> LEISLER. Temminck's Stint	198
<i>Calidris alpinus alpinus</i> LINNAEUS. Dunlin	199
<i>Calidris testaceus</i> PALLAS. Curlew-Sandpiper	200
<i>Limicola falcinellus</i> PONTOPPIDAN. Broad-Billed Sandpiper	201
<i>Philomachus pugnax</i> LINNAEUS. Ruff	202

Appendix No. V

Subfamily Phalaropinae	
<i>Lobipes lobatus</i> = <i>P. lobatus</i> . Northern or Red-Necked Phalarope	Appendix No. II 455

Subfamily Recurvirostrinae

<i>Himantopus himantopus himantopus</i> LINNAEUS. Black-Winged Stilt	203
<i>Recurvirostra avosetta</i> LINNAEUS. Avocet	205

Subfamily Rostratula

<i>Rostratula benghalensis benghalensis</i> LINNAEUS. Painted Snipe	205
---	-----

FAMILY GLAREOLIDAE

Subfamily Cursoriinae

<i>Cursorius cursor cursor</i> LATHAM. Cream-Coloured Courser	207
<i>Cursorius coromandelicus</i> GMELIN. Indian Courser	208

Subfamily Glareolinae

<i>Glareola pratincola</i> LINNAEUS. Pratincole	209
---	-----

SUBORDER LARI

FAMILY LARIDAE

Subfamily Stercorariinae

<i>Coprotheres pomarinus</i> = <i>Stercorarius pomatorhinus</i> . Pomarine Jaeger or Skua	Appendix No. II 455
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<i>Stercorarius parasiticus</i> = <i>S. crepidatus</i> . Parasitic Jaeger or Arctic Skua.	Appendix No. II	456
<i>Stercorarius longicaudus</i> = <i>S. buffoni</i> . Long-Tailed Jaeger or Skua . . .	Appendix No. II	456

Subfamily Larinae

<i>Larus ichthyaetus</i> PALLAS. Great Black-Headed Gull	210
<i>Larus ridibundus</i> LINNAEUS. Black-Headed Gull	211
<i>Larus brunicephalus</i> JERDON. Brown-Headed Gull	212
<i>Larus genei</i> BRÈME. Slender-Billed Gull	212
<i>Larus argentatus heuglini</i> BREE. Eastern Black-Backed Gull	213
<i>Larus argentatus cachinnans</i> PALLAS. Yellow-Legged Herring Gull	214

Subfamily Sterninae

<i>Chlidonias hybrida indica</i> STEPHENS. Indian Whiskered Tern	214
<i>Chlidonias leucoptera</i> TEMMINCK. White-Winged Black Tern.	215
<i>Gelochelidon nilotica nilotica</i> GMELIN. Gull-Billed Tern	216
<i>Hydroprogne caspia caspia</i> PALLAS. Caspian Tern	216
<i>Sterna aurantia</i> GRAY. Indian River Tern	217
<i>Sterna hirundo</i> LINNAEUS. Common Tern	219
<i>Sterna melanogaster</i> TEMMINCK. Black-Bellied Tern	220
<i>Sterna albifrons</i> PALLAS. Ternlet	221
<i>Sterna bergi</i> LICHTENSTEIN. Red Sea Crested Tern	222
<i>Sterna bengalensis</i> . Lesser Crested Tern	Appendix No. II 456

Subfamily Rhynchopinae

<i>Rhyncops albigollis</i> SWAINSON. Indian Skinner	222
---	-----

ORDER COLUMBIFORMES

SUBORDER PTEROCLETES

FAMILY PTEROCLIDAE

<i>Pterocles exustus erlangeri</i> NEUMANN. Common Indian Sandgrouse	223
<i>Pterocles senegallus</i> LINNAEUS. Spotted Sandgrouse	224
<i>Pterocles orientalis</i> LINNAEUS. Imperial or Large Black-Bellied Sandgrouse	225
<i>Pterocles indicus</i> GMELIN. Painted Sandgrouse	226

SUBORDER COLUMBAE

FAMILY COLUMBIDAE

Subfamily Treroninae

<i>Treron phoenicoptera chlorigaster</i> BLYTH. Southern Green Pigeon	228
---	-----

Subfamily Columbinae

<i>Columba livia intermedia</i> STRICKLAND. Blue Rock-Pigeon	231
<i>Streptopelia orientalis</i> LATHAM. Rufous Turtle Dove	232
<i>Streptopelia chinensis suratensis</i> GMELIN. Indian Spotted Dove	232
<i>Streptopelia senegalensis cambayensis</i> GMELIN. Little Brown Dove	234
<i>Streptopelia decaocto decaocto</i> FRIVALDSZKY. Indian Ring Dove	235
<i>Streptopelia tranquebarica tranquebarica</i> HERMANN. Indian Red Turtle Dove	236
<i>Chalcophaps indica</i> LINNAEUS. Emerald or Bronze-Winged Dove	416

ORDER PSITTACIFORMES

FAMILY PSITTACIDAE

Subfamily Psittacinae

<i>Psittacula eupatria</i> LINNAEUS. Large Indian Paroquet	417
<i>Psittacula krameri</i> SCOPOLI. Indian Rose-Ringed Parakeet	237
<i>Psittacula cyanocephala</i> LINNAEUS. Blossom-Headed Parakeet	239

ORDER STRIGIFORMES

FAMILY STRIGIDAE

Subfamily Striginae

<i>Otus brucei</i> HUME. Striated Scops Owl	241
<i>Otus scops</i> LINNAEUS. Indian Scops Owl	241
<i>Otus scops pulchellus</i> PALLAS. Eastern Scops Owl	242
<i>Otus bakkamoena</i> PENNANT. Collared Scops Owl	243
<i>Bubo bubo bengalensis</i> FRANKLIN. Great Horned Owl	243
<i>Bubo coromandus coromandus</i> LATHAM. Dusky Horned Owl	246
<i>Bubo zeylonensis</i> GMELIN. Brown Fish Owl	247
<i>Glaucidium radiatum</i> TICKELL. Jungle Owlet	418
<i>Athene brama</i> TEMMINCK. Spotted Owlet	248
<i>Strix ocellata grandis</i> KOELZ. Large Mottled Wood Owl	249
<i>Asio flammeus flammeus</i> PONTOPPIDAN. Short-Eared Owl	250
<i>Tyto alba</i> SCOPOLI. Barn Owl	252

ORDER CAPRIMULGIFORMES

SUBORDER CAPRIMULGI

FAMILY CAPRIMULGIDAE

Subfamily Caprimulginae

<i>Caprimulgus europaeus unwini</i> HUME. Hume's Nightjar	253
<i>Caprimulgus indicus</i> LATHAM. Indian Jungle Nightjar	254
<i>Caprimulgus mahrattensis</i> SYKES. Sykes' Nightjar	254
<i>Caprimulgus monticola monticola</i> FRANKLIN. Franklin's Nightjar	255
<i>Caprimulgus asiaticus</i> LATHAM. Common Indian Nightjar	256

ORDER TROGONIFORMES

FAMILY TROGONIDAE

<i>Harpactes fasciatus</i> PENNANT. Malabar Trogon	418
--	-----

ORDER CORACIIFORMES

SUBORDER CORACII

FAMILY CORACIIDAE

Subfamily Coraciinae

<i>Coracias garrulus semenowi</i> LOUDON AND TSCHUDI. Kashmir Roller	258
<i>Coracias benghalensis benghalensis</i> LINNAEUS. Indian Roller	259

SUBORDER ALCEDINES

FAMILY ALCEDINIDAE

Subfamily Cerylinae

<i>Ceryle rudis leucomelanura</i> REICHENBACH. Indian Pied Kingfisher	260
---	-----

Subfamily Alcedininae

<i>Alcedo atthis</i> LINNAEUS. Common Kingfisher	261
--	-----

Subfamily Daceloninae

<i>Pelargopsis capensis</i> LINNAEUS. Brown-Headed Stork-Billed Kingfisher	419
<i>Halcyon smyrnensis</i> LINNAEUS. White-Breasted Kingfisher	263
<i>Halcyon pileata</i> BODDAERT. Black-Capped Kingfisher	420

SUBORDER MEROPES

FAMILY MEROPIDAE

<i>Merops apiaster</i> LINNAEUS. European Bee-Eater	264
<i>Merops orientalis orientalis</i> LATHAM. Green Bee-Eater	265
<i>Merops superciliosus persicus</i> PALLAS. Blue-Checked Bee-Eater	266

SUBORDER UPUPAE

FAMILY UPUPIDAE

Subfamily Upupinae

<i>Upupa epops</i> LINNAEUS. Hoopoe	268
---	-----

SUBORDER BUCEROTES

FAMILY BUCEROTIDAE

<i>Tockus birastris</i> SCOPOLI. Common Grey Hornbill	269
---	-----

ORDER APODIFORMES

SUBORDER APODI

FAMILY APODIDAE

Subfamily Apodinae

<i>Apus melba</i> LINNAEUS. Alpine Swift	270
<i>Apus affinis affinis</i> J. E. GRAY. Indian House Swift	271
<i>Cypsiurus parvus balasiensis</i> J. E. GRAY. Western Palm Swift	272

Subfamily Hemiprocninae

<i>Hemiprocne longipennis coronatus</i> TICKELL. Indian Crested Swift	273
---	-----

ORDER PICIFORMES

SUBORDER GALBULAE

FAMILY CAPITONIDAE

<i>Megalaima zeylanica</i> GMELIN. Green Barbet	420
<i>Megalaima haemacephala indica</i> LATHAM. Crimson-Breasted Barbet or Coppersmith	274

SUBORDER PICI

FAMILY PICIDAE

Subfamily Picinae

<i>Micropternus brachyurus jerdoni</i> MALHERBE. Southern Rufous Woodpecker	421
<i>Picus myrmecophoneus</i> STRESEMANN. Scaly-Bellied Green Woodpecker	422
<i>Dinopium benghalense</i> LINNAEUS. Golden-Backed Woodpecker	275
<i>Dryocopus javensis hodgsoni</i> JERDON. Great Black Woodpecker	422
<i>Picoides mahrattense</i> LATHAM. Yellow-Fronted Pied Woodpecker	276
<i>Picoides nanus</i> VIGORS. Indian Pygmy Woodpecker	278
<i>Hemicircus canente canente</i> LESSON. Heart-Spotted Woodpecker	423
<i>Chrysocolaptes lucidus chersonesus</i> KLOSS. Malherbe's Golden-Backed Woodpecker	423
<i>Chrysocolaptes festivus</i> BODDAERT. Black-Backed Woodpecker	424

Subfamily Jyngine

<i>Jynx torquilla</i> LINNAEUS. Wryneck	279
---	-----

ORDER PASSERIFORMES

SUBORDER TYRANNI

FAMILY PITTIDAE

<i>Pitta brachyura</i> LINNAEUS. Indian Pitta	280
---	-----

SUBORDER OSCINES

FAMILY ALAUDIDAE

<i>Mirafra javanica</i> HORSFIELD. Singing Bush Lark	282
<i>Mirafra erythroptera</i> BLYTH. Red-Winged Bush Lark	283
<i>Eremopterix grisea</i> SCOPOLI. Ashy-Crowned Finch Lark	284
<i>Ammomanes phoenicurus phoenicurus</i> FRANKLIN. Rufous-Tailed Finch Lark	285
<i>Alaemon alaudipes doriae</i> SALVADORI. Desert Lark	286
<i>Calandrella cinerea</i> EHMCKE. Short-Toed Lark	287

<i>Calandrella raytal krishnakumarsinhji</i> VAURIE AND DHARMAKUMARSINHJI. Bhavnagar's Sand Lark	288
<i>Galerida cristata chendoola</i> FRANKLIN. Franklin's Crested Lark	289
<i>Galerida deva</i> SYKES. Sykes' Crested Lark	290
<i>Alauda gulgula</i> FRANKLIN. Small Skylark	292

FAMILY HIRUNDINIDAE

Subfamily Hirundininae

<i>Riparia riparia diluta</i> SHARPE and WYATT. Siberian Sand Martin	293
<i>Hirundo rupestris</i> SCOPOLI. Crag Martin	294
<i>Hirundo concolor</i> SYKES. Dusky Crag Martin	294
<i>Hirundo rustica</i> LINNAEUS. Common Swallow	295
<i>Hirundo smithi filifera</i> STEPHENS. Wire-Tailed Swallow	296
<i>Hirundo fluvicola</i> BLYTH. Indian Cliff Swallow	297
<i>Hirundo daurica erythrogygia</i> SYKES. Sykes' Striated or Red-Rumped Swallow	298

FAMILY PYCNONOTIDAE

<i>Pycnonotus haemarrhus pallidus</i> STUART BAKER. Red-Vented Bulbul	299
<i>Pycnonotus leucogenys leucotis</i> GOULD. White-Eared Bulbul	300
<i>Pycnonotus jocosus</i> LINNAEUS. Red-Whiskered Bulbul	424
<i>Pycnonotus luteolus</i> LESSON. White-Browed Bulbul	425

FAMILY IRENIDAE

Subfamily Aegithininae

<i>Aegithina tiphia tiphia</i> LINNAEUS. Common Iora	302
<i>Aegithina tiphia humei</i> STUART BAKER. Central Indian Iora	303
<i>Aegithina nigrolutea</i> MARSHALL. Marshall's Iora	304
<i>Chloropsis jerdoni</i> BLYTH. Jerdon's Chloropsis	425
<i>Chloropsis aurifrons</i> TEMMINCK. Gold-Fronted Chloropsis	426

FAMILY CAMPEPHAGIDAE

<i>Hemipus picatus</i> SYKES. Black-Backed Pied Shrike	426
<i>Tephrodornis pondicerianus</i> GMELIN. Common Wood Shrike	305
<i>Coracina novaehollandiae macai</i> LESSON. Large Indian Cuckoo-Shrike	306
<i>Coracina melanoptera sykesi</i> STRICKLAND. Black-Headed Cuckoo-Shrike	307
<i>Pericrocotus flammeus flammeus</i> FORSTER. Orange Minivet	427
<i>Pericrocotus peregrinus dharmakumari</i> KOELZ. Dharmakumar's Small Minivet	308
<i>Pericrocotus erythrogygius</i> JERDON. White-Bellied Minivet	310
<i>Pericrocotus ethologus</i> BANGS AND PHILLIPS. Indian Short-Billed Minivet	428

FAMILY MUSCICAPIDAE

Subfamily Muscicapinae

<i>Terpsiphone paradisi paradisi</i> LINNAEUS. Paradise Flycatcher	311
<i>Hypothymis azurea</i> BODDAERT. Black-Naped Flycatcher	313
<i>Ficedula parva</i> BECHSTEIN. Red-Breasted Flycatcher	313
<i>Niltava tickelliae tickelliae</i> BLYTH. Tickell's Flycatcher	314
<i>Muscicapa striata neumanni</i> POCHÉ. Eastern Spotted Flycatcher	316
<i>Muscicapa latirostris</i> RAFFLES. Indian Brown Flycatcher	428
<i>Muscicapa ruficauda</i> SWAINSON. Rufous-Tailed Flycatcher	429
<i>Muscicapa thalassina</i> SWAINSON. Verditer Flycatcher	429
<i>Culicicapa ceylonensis calochrysea</i> OBERHOLSER. Grey-Headed Flycatcher	316
<i>Rhipidura aureola aureola</i> LESSON. White-Browed Fantail Flycatcher	318
<i>Rhipidura pectoralis</i> HAY. White-Spotted Fantail Flycatcher	429

Subfamily Timaliinae

<i>Pomatorhinus schisticeps horsfieldi</i> SYKES. Scimitar Babbler	320
<i>Dumetia hyperythra</i> FRANKLIN. White-Throated Babbler	320
<i>Chrysomma sinensis</i> GMELIN. Indian Yellow-Eyed Babbler	321
<i>Turdoides caudata caudata</i> DUMONT. Common Babbler	322

<i>Turdoides malcolmi</i> SYKES. Grey Babbler	323
<i>Turdoides somervillei</i> SYKES. Jungle Babbler	324

Subfamily Sylviinae

<i>Alcippe poiocephala brucei</i> HUME. Bombay Quaker Babbler	326
<i>Hippolais caligata</i> LICHTEINSTEIN. Sykes' Tree-Warbler	327
<i>Hippolais scita</i> EVERSMANN. Booted Tree-Warbler	328
<i>Sylvia curruca affinis</i> BLYTH. Indian Lesser Whitethroat	328
<i>Sylvia nana</i> HEMPRICH AND EHRENBERG. Desert Warbler	430
<i>Sylvia hortensis crassirostris</i> CRETZSCHMAR. Eastern Orphean Warbler	329
<i>Sylvia communis icterops</i> MENETRIES. Indian Whitethroat	331
<i>Chaetornis striatus</i> JERDON. Bristled Grass-Warbler	430
<i>Luscinola melanopogon</i> TEMMINCK. Eastern Moustached Sedge-Warbler	331
<i>Acrocephalus dumetorum</i> BLYTH. Blyth's Reed-Warbler	332
<i>Acrocephalus agricola</i> JERDON. Paddy-Field Warbler	333
<i>Acrocephalus stentoreus brunescens</i> JERDON. Indian Great Reed-Warbler	333
<i>Phylloscopus collybita</i> VIEILLLOT. Chiff-Chaff	334
<i>Phylloscopus griseolus</i> BLYTH. Olivaceous Tree-Warbler	335
<i>Phylloscopus trochiloides viridanus</i> BLYTH. Greenish Willow Warbler	335
<i>Phylloscopus trochiloides nitidus</i> BLYTH. Green Willow Warbler	336
<i>Orthotomus sutorius sutorius</i> PENNANT. Tailorbird	337
<i>Prinia hodgsoni pallidior</i> KOELZ. Kathiawar Wren-Warbler	338
<i>Prinia buehanani</i> BLYTH. Rufous-Fronted Wren-Warbler	340
<i>Prinia gracilis lepida</i> BLYTH. Streaked Wren-Warbler	341
<i>Prinia socialis</i> SYKES. Ashy Wren-Warbler	342
<i>Prinia sylvatica</i> JERDON. Jungle Wren-Warbler	343
<i>Prinia inornata</i> SYKES. Indian Wren-Warbler	344
<i>Cisticola juncidis cursitans</i> FRANKLIN. Streaked Fantail Warbler	345

Subfamily Turdinae

<i>Erithacus sueticus</i> LINNAEUS. Bluethroat	346
<i>Erythropygia galactotes familiaris</i> MENETRIES. Grey-Backed Warbler	347
<i>Phoenicurus ochruros phoenicuroides</i> HORSFIELD AND MOORE. Kashmir Redstart	347
<i>Copsychus saularis saularis</i> LINNAEUS. Indian Magpie-Robin	348
<i>Copsychus macrourus malabaricus</i> SCOPOLI. Shama	431
<i>Saxicoloides fuscata cambaiensis</i> LATHAM. Indian Brown-Backed Robin	349
<i>Turdus merula nigropileus</i> LAFRESNAYE. Black-Capped Blackbird	351
<i>Turdus citrinus cyanolus</i> JARDINE AND SELOY. White-Throated Ground Thrush	431
<i>Monticola solitaria pandoo</i> SYKES. Blue Rock Thrush	352
<i>Monticola gularis cinclorhyncha</i> VIGORS. Blue-Headed Rock Thrush	432
<i>Oenanthe isabellina</i> TEMMINCK. Isabelline Chat	353
<i>Oenanthe deserti</i> TEMMINCK. Desert Chat or Desert Wheatear	353
<i>Oenanthe xanthopyrma</i> HEMPRICH AND EHRENBERG. Red-Tailed Chat	354
<i>Oenanthe picata</i> BLYTH. Pied Chat	355
<i>Oenanthe picata opistholeuca</i> STRICKLAND. Strickland's Chat	432
<i>Cercomela fusca</i> BLYTH. Brown Rock Chat	433
<i>Saxicola macrorhyncha</i> STOLICZKA. Stoliczka's Bush-Chat	355
<i>Saxicola caprata bicolor</i> SYKES. Pied Bush-Chat	356
<i>Saxicola torquata indica</i> BLYTH. Indian or Collared Bush-Chat	357
<i>Myiophonus horsfieldi</i> VIGORS. Malabar Whistling Thrush	433

FAMILY MOTACILLIDAE

<i>Anthus trivialis</i> LINNAEUS. Tree Pipit	357
<i>Anthus hodgsoni</i> RICHMOND. Indian Tree Pipit	358
<i>Anthus similis</i> JERDON. Brown Rock Pipit	359
<i>Anthus novaeseelandiae</i> GMELIN. Indian Pipit	359
<i>Anthus campestris</i> LINNAEUS. Tawny Pipit	360
<i>Anthus roseata</i> BLYTH. Hodgson's Pipit	361

<i>Motacilla flava beema</i> SYKES. Blue-Headed Yellow Wagtail	362
<i>Motacilla flava thunbergi</i> BILLBERG. Grey-Headed Yellow Wagtail	362
<i>Motacilla feldegg flava</i> MICHAELLES. Black-Headed Wagtail	363
<i>Motacilla citreola citreola</i> PALLAS. Yellow-Headed Wagtail	364
<i>Motacilla cinerea</i> TUNSTALL. Eastern Grey Wagtail	365
<i>Motacilla maderaspatensis</i> GMELIN. Pied Wagtail	366
<i>Motacilla alba dukhunensis</i> SYKES. Indian White Wagtail	367
<i>Motacilla indica</i> GMELIN. Forest Wagtail	434

FAMILY LANIIDAE

Subfamily Lanninae

<i>Lanius excubitor</i> LINNAEUS. Indian Grey Shrike	368
<i>Lanius vittatus</i> VALENCIENNES. Bay-Backed Shrike	370
<i>Lanius schach</i> LINNAEUS. Rufous-Backed Shrike	371
<i>Lanius collurio</i> LINNAEUS. Red-Backed Shrike	372
<i>Lanius isabellinus</i> HEMPRICH AND EHRENBURG. Pale-Brown Shrike	372

FAMILY ARTAMIDAE

<i>Artamus fuscus</i> VIEILLOT. Ashy Swallow-Shrike	434
---	-----

FAMILY SITTIDAE

Subfamily Salporninae

<i>Salpornis spilonotus</i> FRANKLIN. Spotted Grey Creeper	435
<i>Sitta europaea</i> LINNAEUS. Chestnut-Bellied Nuthatch	435
<i>Sitta frontalis</i> SWAINSON. Velvet-Fronted Nuthatch	436

FAMILY PARIDAE

Subfamily Parinae

<i>Parus nuchalis</i> JERDON. White-Winged Black Tit	437
<i>Parus major</i> LINNAEUS. Grey Tit	373
<i>Parus xanthogenys</i> VIGORS. Yellow-Cheeked Tit	437

FAMILY DIGAIDAE

<i>Dicaeum agile</i> TICKELL. Thick-Billed Flowerpecker	374
<i>Dicaeum erythrorhynchos erythrorhynchos</i> LATHAM. Tickell's or Yellow-Billed Flowerpecker	438

FAMILY NECTARINIIDAE

<i>Nectarinia zeylonica</i> LINNAEUS. Purple-Rumped Sunbird	438
<i>Nectarinia asiatica asiatica</i> LATHAM. Purple Sunbird	375
<i>Aethopyga siparaja vigorsi</i> SYKES. Vigor's Yellow-Backed Sunbird	439

FAMILY ZOSTEROPIDAE

<i>Zosterops palpebrosa</i> TEMMINCK AND SCHLEGEL. White-Eye	377
--	-----

FAMILY FRINGILLIDAE

Subfamily Emberizinae

<i>Emberiza buchanani</i> BLYTH. Grey-Necked Bunting	378
<i>Emberiza melanocephala</i> SCOPOLI. Black-Headed Bunting	379
<i>Emberiza icterica</i> EVERSMAAN. Red-Headed Bunting	380
<i>Emberiza striolata</i> LICHTENSTEIN. Striolated Bunting	380
<i>Melophus lathamii</i> GRAY. Crested Bunting	381

Subfamily Carduelinae

<i>Erythrura erythrura</i> PALLAS. Rose-Finch	382
---	-----

FAMILY PLOCEIDAE

Subfamily Passerinae

<i>Petronia exanthocollis</i> BURTON. Yellow-Throated Sparrow	382
<i>Passer domesticus</i> LINNAEUS. House Sparrow	383

<i>Ploceus philippinus</i> LINNAEUS. Baya or Weaver Bird	384
<i>Ploceus benghalensis</i> LINNAEUS. Black-Throated Weaver Bird	439
<i>Ploceus manyar</i> HORSFIELD. Streaked Weaver Bird	440

Subfamily Estrildinae

<i>Estrilda amandava</i> LINNAEUS. Red Munia	441
<i>Estrilda formosa</i> LATHAM. Green Munia	441
<i>Lonchura malabarica</i> LINNAEUS. White-Throated Munia	386
<i>Lonchura punctulata</i> LINNAEUS. Indian Spotted Munia	388

FAMILY STURNIDAE

Subfamily Sturninae

<i>Sturnus malabarica</i> GMELIN. Grey-Headed Myna	442
<i>Sturnus pagodarum</i> GMELIN. Brahminy or Black-Headed Myna	388
<i>Sturnus roseus</i> LINNAEUS. Rosy Pastor or Rose-Coloured Starling	390
<i>Sturnus vulgaris</i> LINNAEUS. Starling	392
<i>Acridotheres tristis tristis</i> LINNAEUS. Common Myna	392
<i>Acridotheres ginginianus</i> LATHAM. Bank Myna	394
<i>Acridotheres fuscus</i> WAGLER. Jungle Myna	395

FAMILY ORIOLIDAE

<i>Oriolus oriolus kundoo</i> SYKES. Golden Oriole	395
<i>Oriolus xanthornus</i> LINNAEUS. Black-Headed Oriole	397

FAMILY DICRURIDAE

<i>Dicrurus macrocerus</i> VIEILLOT. Drongo or King Crow	398
<i>Dicrurus leucophaeus longicaudatus</i> JERDON. Indian Grey Drongo	400
<i>Dicrurus caerulescens caerulescens</i> LINNAEUS. White-Bellied Drongo	400
<i>Dicrurus paradiseus</i> LINNAEUS. Racket-Tailed Drongo	442
<i>Harpactes fasciatus</i> PENNANT. Malabar Trogon	418

FAMILY CORVIDAE

<i>Crypsirina vagabunda</i> LATHAM. Tree Pic	401
<i>Corvus splendens splendens</i> VIEILLOT. Indian House Crow	402
<i>Corvus macrorhynchus culminatus</i> SYKES. Indian Jungle Crow	404
<i>Corvus corax</i> LINNAEUS. Raven	443
Song Chart	xxxviii
Phonetic Scheme	li
Standard of Size	li
Bird Diagrams	lii
Bird Flight	liii
Glossary	547
Index	549

ILLUSTRATIONS

Indian Tawny Eagle on Nest *Frontispiece*

COLOURED PLATES

	Page
1. 1 Dalmatian or Grey Pelican. 2 Great Crested Grebe (summer). 3 Indian Skimmer. 4 Little Grebe or Dabchick. 5 White or Rosy Pelican (immature). 6 White or Rosy Pelican (adult)	463
2. 1 Short-toed Eagle (adult). 2 Imperial Eagle (adult). 3 White-eyed Buzzard-Eagle (adult). 4 Osprey (adult). 5 Steppe Eagle (immature). 6 Crested Hawk Eagle. 7 Pallas' Fishing Eagle (adult)	465
3. 1 Common or White-backed Vulture (adult). 2 Neophron or White Scavenger Vulture (adult). 3 Long-legged Buzzard (immature). 4 Black or King Vulture (adult). 5 Fulvous or Griffon Vulture (adult). 6 Crested Honey-Buzzard (immature). 7 Long-billed Vulture (adult)	467
4. 1 Peregrine Falcon (adult). 2 Peregrine Falcon (immature). 3 Brahminy Kite. 4 Montagu's Harrier (adult female). 5 Pale Harrier (adult male). 6 Common Pariah Kite. 7 Black-winged Kite. 8 Marsh Harrier (immature)	469
5. 1 Indian Serpent Eagle. 2 Indian Tawny Eagle (adult—white phase). 3 Bonelli's Eagle (adult female). 4 Saker Falcon or Chergul (adult female). 5 Laggar Falcon (adult female). 6 Laggar Falcon (immature male)	471
6. 1 Hobby. 2 Red-headed Merlin (adult female). 3 Kestrel (adult male). 4 Shikra (adult and immature). 5 Shahin Falcon (adult female). 6 Sparrow Hawk (immature)	473
7. 1 Turnstone (summer). 2 Curlew. 3 Indian Stone Curlew. 4 Indian Courser. 5 Indian Little Green Heron. 6 Indian Pond Heron (summer). 7 Chestnut Bittern. 8 Indian Black Ibis. 9 Glossy Ibis	475
8. 1 Night Heron (adult and immature). 2 Indian Spoonbill. 3 Little Cormorant. 4 Grey Heron. 5 White Stork. 6 White-necked Stork. 7 Macqueen's Bustard or Houbara (female). 8 Cream coloured Courser. 9 Openbill Stork (immature)	477
9. 1 Sarus Crane. 2 Flamingo. 3 Crab Plover. 4 Eastern Grey Lag Goose. 5 Black-necked Stork (adult male). 6 Painted Stork	479
10. 1 Ruddy Sheld-Duck or Brahminy Duck (male). 2 Mallard (male and female). 3 Gadwall (male). 4 Common Teal (male). 5 Garganey Teal (male). 6 Shoveler (male). 7 Pintail (male). 8 Wigeon (male)	481
11. 1 Lesser or Common Whistling Teal. 2 Nukhta or Comb Duck (male—breeding). 3 Spotbill or Grey Duck (male). 4 Tufted Pochard (male). 5 Common Pochard or Dun-Bird (male). 6 Red-crested Pochard (male). 7 Marbled Teal (male). 8 White-eyed Pochard (male). 9 Cotton Teal or Indian Pygmy Goose (male)	483
12. 1 Common or Grey Quail (male and female). 2 Black-Breasted or Rain Quail (male and female). 3 Jungle Bush-Quail (male and female). 4 Rock Bush-Quail (male and female). 5 Painted Partridge. 6 Common Grey Partridge or Francolin (male). 7 Common Bustard-Quail (male and female)	485
13. 1 Sirkeer Cuckoo. 2 Koel (male and female). 3 Common Hawk Cuckoo. 4 Crow Pheasant or Coucal. 5 Blossom-headed Parakeet (male). 6 Crimson-breasted Barbet or Coppersmith. 7 Indian Roller. 8 Kashmir Roller	487

14. 1 Purple Heron. 2 Cattle Egret (breeding). 3 Great Indian Bustard (female). 4 Little Egret. 5 Lesser Florican (male). 6 Lesser Florican (female). 7 Eastern Curlew (head of Whimbrel). 8 Demoiselle Crane. 9 Indian Reef Heron (dark variety). 10 Eastern Common Crane 489
15. 1 Black-winged Stilt. 2 Brown Crake (breeding). 3 Pheasant-tailed Jacana (breeding). 4 Purple Moorhen. 5 White-breasted Water Hen. 6 Watercock or Kora (juvenile male). 7 Wood Sandpiper (autumn). 8 Green Sandpiper (autumn). 9 Indian Moorhen. 10 Fantail Snipe. 11 Eastern Baillon's Crake. 12 Spotted Crake. 13 Painted Snipe (female—in foreground). 14 Coot 491
16. 1 Jerdon's Little Ringed Plover. 2 Kentish Plover (male—summer). 3 Lesser Sand Plover (winter). 4 Eastern Golden Plover. 5 Grey Plover (winter). 6 Large Sand Plover (autumn). 7 Red-wattled Lapwing. 8 Yellow-wattled Lapwing. 9 Pratincole. 10 Oyster-Catcher (winter). 11 Great Stone Curlew 493
17. 1 Curlew-Sandpiper (winter). 2 Marsh Sandpiper (winter). 3 Avocet. 4 Temminck's Stint. 5 Dunlin (summer). 6 Ruff (juvenile male—winter). 7 Little Stint (winter). 8 Black-tailed Godwit (winter). 9 Sanderling (winter). 10 Common Sandpiper (winter). 11 Western Terek Sandpiper (winter). 12 Redshank (summer). 13 Green-shank (autumn) 495
18. 1 Gull-billed Tern (winter). 2 Indian Darter or Snake Bird. 3 Indian Whiskered Tern (breeding). 4 Black-bellied Tern (breeding). 5 Caspian Tern. 6 Brown-headed Gull (winter). 7 Black-headed Gull (summer). 8 Slender-billed Gull (winter). 9 Yellow-legged Herring Gull. 10 Great Black-headed Gull (autumn) 497
19. 1 European Bee-Eater. 2 Indian Pitta. 3 Indian Rose-ringed Parakeet (male). 4 Indian Red Turtle Dove (male). 5 Indian Ring Dove. 6 Indian Spotted Dove. 7 Common Indian Sandgrouse (male and female). 8 Southern Green Pigeon. 9 Painted Sandgrouse (male and female) 499
20. 1 Common Grey Hornbill. 2 Black-capped Blackbird. 3 Peacock. 4 Spotted Sandgrouse (male and female). 5 Desert Lark. 6 Imperial Sandgrouse (male and female). 7 Sheld-duck. 8 Black-necked Grebe (male—winter) 501
21. 1 Common Indian Nightjar. 2 Sykes' Nightjar. 3 Collared Scops Owl. 4 Barn Owl. 5 Short-eared Owl. 6 Spotted Owlet. 7 Brown Fish Owl. 8 Large Mottled Wood Owl. 9 Great Horned Owl. 503
22. 1 Wire-tailed Swallow. 2 Common Green Bee-Eater. 3 Common Kingfisher. 4 Blue-checked Bee-Eater. 5 Indian Pied Kingfisher. 6 White-breasted Kingfisher. 7 Indian House Swift. 8 Western Palm Swift. 9 Hoopoe. 10 Alpine Swift 505
23. 1 Yellow-fronted Pied Woodpecker (male). 2 Black-naped Flycatcher (male). 3 Golden-backed Woodpecker (female). 4 Indian Pygmy Woodpecker (male). 5 Wryneck. 6 Cuckoo. 7 Pied Crested Cuckoo. 8 White-Eye 507
24. 1 Short-toed Lark. 2 Sykes' Crested Lark. 3 Singing Bush Lark. 4 Small Skylark. 5 Ashy-crowned Finch Lark (male and female). 6 Rufous-tailed Finch Lark. 7 Purple Sunbird (two males and a female). 8 Indian Tree Pipit. 9 Indian Pipit. 10 Bhavnagar's Sand Lark 509
25. 1 Indian Grey Shrike. 2 Bay-backed Shrike. 3 Pale Brown Shrike. 4 Common Wood Shrike. 5 Rufous-backed Shrike. 6 Large Indian Cuckoo-Shrike (male). 7 Drongo or King Crow. 8 Black-headed Cuckoo-Shrike (male). 9 Chiff-Chaff. 10 Dharmakumar's Small Minivet (male) 511
26. 1 Indian Brown-backed Robin (male). 2 Blue Rock Thrush (male). 3 Indian Magpie-Robin (male). 4 Paradise Flycatcher (male and female). 5 Eastern Spotted Flycatcher. 6 Red-breasted Flycatcher (male). 7 Grey-headed Flycatcher. 8 White-browed Fantail Flycatcher 513

27.	1 Indian House Crow. 2 White-bellied Minivet (male). 3 Indian Jungle Crow. 4 Grey Tit. 5 Tree Pie. 6 Indian Yellow-eyed Babbler. 7 Jungle Babbler. 8 White-throated Babbler. 9 Grey Babbler. 10 Common Babbler	515
28.	1 Rufous-fronted Wren-Warbler. 2 Kathiawar Wren-Warbler. 3 Tailorbird. 4 Indian Lesser Whitethroat. 5 Greenish Willow Warbler. 6 Eastern Orphean Warbler. 7 Indian Great Reed-Warbler. 8 Streaked Fantail Warbler. 9 Ashy Wren-Warbler. 10 Indian Wren-Warbler. 11 Jungle Wren-Warbler	517
29.	1 Central Indian Iora (male). 2 Red-vented Bulbul. 3 White-eared Bulbul. 4 Pied Bush-Chat (male). 5 Pied Chat (male). 6 Indian or Collared Bush-Chat (male). 7 Desert Chat or Desert Wheatear (male). 8 Marshall's Iora (female). 9 Bluethroat (male). 10 Kashmir Redstart (male)	519
30.	1 Sykes' Striated or Red-rumped Swallow. 2 Common Swallow. 3 Indian White Wagtail. 4 Pied Wagtail. 5 Grey-headed Yellow Wagtail. 6 Black-headed Wagtail. 7 Yellow-headed Wagtail. 8 Eastern Grey Wagtail (male-winter)	521
31.	1 Baya or Weaver Bird (male and female—breeding). 2 White-throated Munia. 3 Indian Spotted Munia. 4 Black-headed Bunting (male). 5 Yellow-throated Sparrow. 6 Grey-necked Bunting. 7 Rose-Finch (male and female). 8 Red-headed Bunting (male). 9 House Sparrow (male and female). 10 Striolated Bunting	523
32.	1 Golden Oriole (male). 2 Black-headed Oriole (male). 3 Rosy Pastor or Rose-coloured Starling (male). 4 Starling. 5 Brahminy or Black-headed Myna. 6 Bank Myna. 7 Common Myna	525
33.	1 Brown-headed Stork-billed Kingfisher. ■ Malabar Trogon (male and female). 3 Heart-spotted Woodpecker (male and female). 4 Great Black Woodpecker (male). 5 Black-capped Kingfisher. 6 Malherbe's Golden-backed Woodpecker (male and female). 7 Black-backed Woodpecker (male and female). ■ Orange Minivet (male and female). 9 Southern Rufous Woodpecker (female). 10 Gold-fronted Chloropsis (male)	527

Indira Gandhi National

PHOTOGRAPHIC PLATES

34.	Black-winged Kite at nest. Female adult Goshawk on prey. Female immature Goshawk caught in Bhavnagar	528
35.	Male Bonelli's Eagle at nest with young. Young Bonelli's Eagles in nest. Side view of immature Imperial Eagle. Front view of immature Imperial Eagle	529
36.	Gopnath Cliffs on the S.E. Saurashtra Sea-Board. Two male Great Indian Bustards. Female Great Indian Bustard alarmed. Female Great Indian Bustard walking towards nest. Nest and egg of Great Indian Bustard	530
37.	Peahen entering nest. A Jheel close to Wankaner. Sirkeer Cuckoo on nest	531
38.	Sarus Crane alighting on nest. Sarus Crane settling on egg with male close by	532
39.	Female Lesser Florican about to enter nest. Female Lesser Florican settling on eggs	533
40.	Female Lesser Florican brooding. Female Lesser Florican with chick (just hatched). Lesser Florican Chicks : 21 days old	534
41.	Male Lesser Florican poised to attack male decoy. Male Lesser Florican with stuffed Stone Curlew in foreground	535
42.	Male Lesser Florican mounting stuffed Stone Curlew. Great Stone Curlew. Author with captured male Lesser Florican ready for ringing	536
43.	Jerdon's Little Ringed Plover on nest. Indian River Tern close to nest and eggs. Black-bellied Tern on nest	537

44.	Great Horned Owl in aggressive pose. A pair of Common Indian Nightjars	538
45.	Red-winged Bush Lark in nest. Red-winged Bush Lark leaving nest	539
46.	Cock Marshall's Iora brooding. Red-vented Bulbul feeding fledglings	540
47.	Rufous-fronted Wren-Warbler feeding young in nest. Rufous-fronted Wren-Warbler after feeding young	541
48.	'Zanzario' Waterfall close to Jamwala, Gir Forest. A Stream in the Gir Forest	542
49.	Hen Weaver Bird feeding fledglings. Brahminy Myna about to feed young. Weaver Bird building nest	543
50.	Gaurishanker Lake, Bhavnagar, one of the many lakes of Saurashtra. Bird-Observatory at Hingolgadh close to Jasdan. A typical hill scene in the Gir Forest	544
51.	Khambhala Lake in the Barda Hills. Coconut Plantation at Mahuva (Gohilwad). Girnar showing Western face. Girnar seen from the Northern side. Datar Hill adjoining Girnar	545

MAPS

1.	Showing migration route (Arrival and Departure) of Curlew in Saurashtra	10
2.	Records of Pelican in Saurashtra	10
3.	Distribution of the Green Pigeon in Saurashtra	229
4.	Distribution of the breeding range of the Spotted Dove in Saurashtra	229
5.	Distribution of the Blossom-Headed Parakeet in Saurashtra	240
6.	Showing migration route of Kashmir Roller (August-December)	240
7.	Distribution of the White-Eared Bulbul in Saurashtra	301
8.	Important Habitat areas of Birds in Saurashtra	301
9.	Main breeding range of the Tickell's Flycatcher in Saurashtra	317
10.	Main breeding area of the following birds in Saurashtra :—1 Indian Magpie-Robin. 2 Black-Headed Cuckoo-Shrike. 3 Large Cuckoo-Shrike. 4 White-Browed Fantail Flycatcher. 5 Paradise Flycatcher. 6 Indian Pitta. 7 Crested Honey-Buzzard. 8 Crested Serpent-Eagle	317
11.	Distribution of the Jungle Babbler in Saurashtra	325
12.	Distribution of the breeding range of the Grey Tit in Saurashtra	325
13.	Map showing direction of Winter migrants in Saurashtra	330
14.	Map showing general trend of direction of local migration in Saurashtra : Arrivals and Departures	330
15.	Map showing direction of return migration of Rosy Pastor in Saurashtra	389
16.	Distribution of the following birds in Saurashtra :—1 White-Throated Babbler. 2 Golden-Backed Woodpecker. 3 Pygmy Woodpecker. 4 Crested Swift. 5 Fish-Owl. 6 Mottled Wood-Owl. 7 Crested Hawk-Eagle. 8 Jungle Bush-Quail	389

INTRODUCTION

It would not be out of place to begin by mentioning how I first became interested in birds. At school, at the age of 10, at Stanmore Park, in Middlesex, I became acquainted with class-mates who had started to collect eggs, or had small collections of their own. I soon became an egg collector too, but as the school did not permit the collection of eggs within the grounds I started collecting at home. In Essex we had a house which was surrounded by a beautiful garden and extensive meadows and woods, and was an ideal home for birds. I soon discovered my first nest, the mud-lined nest of the Song Thrush with blue eggs speckled with black. After that I found many more nests and eggs of different birds. Looking back on my boyhood days, it seems strange to recall that when I returned to India I knew more about British birds and their eggs than about those of my own country. I had a collection of 150 eggs of about 40 British birds. I realised then that my up-bringing had been in a country where the people had been interested in Bird Life for generations and had accumulated a vast wealth of knowledge about their birds.

In India, I found that egg collecting was not much in favour and so I began to observe the habits of Indian birds rather than to hunt and rob their nests. I settled down to watch the seasonal movements of the enormous number of birds that visited us. The recognition of the different species became a persistent obsession and it soon became evident that I would have to shoot them to make absolutely sure of the species. My interest in game bird shooting gave me an advantage, as I could shoot when I was in doubt about sight identification. In this way I accumulated a great deal of information. At a later stage I killed very little, identifying most birds with the use of a powerful pair of binoculars and noting their shape, colour, pattern and size.

In identifying birds correctly, the reading of books on Indian birds, and constant reference to them has been a great help. E. C. Stuart Baker's volumes of *Fauna of British India* and later Sálím Ali's *The Birds of Kutch* were indispensable. *The Journal of the Bombay Natural History Society* has been of great interest and the Society's collection of birds has been invaluable. The excellent plates in Kirkman and Jourdain's *British Birds* have always, I consider, been the background of my knowledge of many birds. Also, I must say that I have much profited by studying books like *The Handbook of British Birds* by Witherby, Jourdain, Ticehurst and Tucker, *British Waders in their*

Haunts by S. Bayliss Smith, *Songs of Wild Birds* by Nicholson and Koch, and *Problems of Bird Migration* by Sir Landsborough Thomson, and many others.

The fact that my home has been in Saurashtra, and that I have spent many years studying Bird Life there, has been of great advantage to me in writing this book. Throughout I have used the name "Saurashtra" as synonymous with "Kathiawar". This country lies on the west coast of India, between the smaller projection of Kutch and the straight line of the Gujarat coast. Most of Saurashtra is hilly, but there is every variety of terrain including desolate salt plains, flat wheat and millet growing land, and open grass and wooded hills. Save for an increase in population, and the improvement of agricultural areas owing to wells, irrigation, and innumerable small and large lakes, the country has not changed radically since it was described in the *Bombay Gazetteer* (see Appendix No. I). River beds have somewhat dried up and flora and fauna have diminished. The climate seems to have changed in recent years, being less severe in Summer and in Winter, but this has still to be confirmed by statistics. Apart from this, the topography remains the same.

This book has been prepared mostly from observations made in the field, from notes from my diaries, and from my specimens collected and identified in the hand. The advantage of having an adequate collection of birds' skins to refer to has been lacking, and I have, therefore, been careful while giving scientific names to omit sub-species wherever I was in doubt. I have been greatly assisted by the American Museum of Natural History, and the collection of birds made by Dr. Walter Koelz, a very competent U.S.A. ornithologist with many years' experience in India and this has enabled me to mention with confidence a number of sub-species about which there had been some doubt. Changes in the classification of birds are still the subject of keen controversy amongst ornithologists and differences of opinion are many, but I have done my utmost to ensure that the generic and subspecific names are correctly recorded, and these have been confirmed by the American Museum of Natural History. I have also referred to *A Checklist of Genera of Indian Birds* by Dr. B. Biswas. It is a difficult task to make a complete list of the birds of Saurashtra and I am aware that some birds may have passed unrecorded, but I believe that my book contains most of the birds which regularly visit us or are resident or locally migratory. A complete ornithological survey of Saurashtra made over at least a year or two would have helped me considerably, but such a survey might well have missed some rare birds which have been recorded by me as the result of many years of field study. Moreover, rapid ornithological surveys often omit birds which breed in secluded areas or which are migratory, whereas my studies of the past fifteen years gives, I believe, a true picture of the birds of Saurashtra as a whole.

While I was compiling the Gujarati names of birds for this book with the valuable assistance of Mr. P. K. Desai, a keen bird observer of Bhavnagar, I was amazed to find that there were hardly any names which were commonly used throughout Saurashtra and Gujarat. Hence, we had either to borrow names from Hindustani wherever possible or to invent new ones. I must mention that Mr. Desai was particularly helpful in coining new names and hope this means a valuable contribution to the Gujarati language.

Many of the birds found in Saurashtra are also found in Kutch, Gujarat and South Rajasthan and so these areas have also been covered in this book. However, a special supplement has been added of notes on birds so far not recorded in Saurashtra but are found in Kutch and Gujarat. This, it is hoped, will considerably help those who are residing outside Saurashtra.

The book is intended primarily as a handbook for bird students coming from the areas covered therein. I have not gone into great detail regarding Warblers, for the Family is one of the most difficult to identify and the student would find it tiresome to have to shoot and then count every feather for confirmation. I have described vividly the commoner species. Among the Sea Birds it is likely that certain birds such as Tropic-birds, Skuas, Petrels, Gannets and Frigates, Shearwaters and Phalaropes, have visited our shores, and some, I am almost sure, I saw, but as I was unable to confirm identification I have omitted them (see Appendix No. II). I have prepared the distribution maps from extensive observations and from reliable information and the migration charts have been made after many years of sighting birds from various stations. I have tried to indicate the direction and time of migration, but more data could have been collected had it been possible to establish bird-observation stations and to ring birds. When referring to flights of trained falcons I have tried to convey to the student how birds react to attacks from Birds of Prey and how they escape rather than to give accounts of falconry.

In order to facilitate bird recognition, the student should read the **SIZE**, **IDENTIFICATION** and **NOTES** given in this book and then glance at the **NESTING** for the time of the breeding season of a particular bird. The season given may not be exact in every case because birds may breed earlier or later according to the local conditions and the climate. On the whole, however, I have tried to give the principal months in which our birds are most likely to breed. Perhaps, it would be helpful if the student makes his own notes from what he sees and then refers the book for confirmation. Of course, the colour plates will play a great part in recognising birds but it has not been possible to depict all the birds given in the book. However, in most cases, I have described the birds in greater detail where I have felt the student might find difficulty in recognition. The paragraph on **FOOD** covers not only the main items of the food of a particular bird but also its general feeding habits as also other details connected with those habits.

CHAPTER I

BIRD MIGRATION

BIRD Migration is the movement of birds from one place to another and back again regularly and periodically. It is an unusually strong and irresistible urge to leave for a predestined area at a particular time, and to return back when that urge is again aroused. We know of birds breeding in colony, which have left their eggs and young to perish and taken only those immature birds which could fly with them. We know that the young of certain species, which have never migrated before, follow a route on their journey to a specified country without any apparent guidance. How do these immature birds know where to go to and what route to take? Yet they follow the ancestral route which has always been used by their species. Bird experts have given various reasons why birds migrate, as for example that they want to reach a warmer climate, or better feeding grounds, or that development of the reproductive organs prompts them to return to their breeding areas. However, there is no complete answer to the problem.

It has been ascertained that birds follow certain routes while migrating from one place to another. These routes or highways are not limited paths as one might imagine, but may cover a width of several hundred miles. However, the direction they follow is a definite one. During the return migration many birds use a different route from that by which they came, and it is then difficult to tell without adequate information exactly which route they have taken. Such knowledge is usually obtained by observation or by ringing birds. Bird experts in Europe and America have established bird-observation stations from which they note facts about birds migrating and in this way all the necessary data is collected and a summary made. By "ringing" or "banding" birds is meant capturing them alive, putting rings on their feet and then letting them loose. The method adopted is this. The birds are trapped; the place, date and species noted. Then an aluminium or light copper ring with a cipher indicating the station which bears a serial number, and the name of the ringer, is put on one of the legs and the bird is released. If that particular bird is killed or recaptured the ring is inspected and the details regarding place and date are recorded. Let us suppose that a young House Crow was ringed at Bhavnagar by Mr. 'X' with a number B 49 on 5th September, 1947, and that this bird was again caught or killed at Rajkot on 8th September, 1947. We then know that the bird travelled in a particular direction and that it took only three days or less to reach there. In this way if a number of birds are ringed

and such information is collected, we can state with great accuracy which direction the birds follow and which route they take. If the Crow B 49 is found or killed after 15 years we get an idea of how many years the bird usually lives. All such information must be recorded systematically in a Bird Register. In Saurashtra, His Highness the Maharaja Saheb of Bhavnagar was the first ruler to start a banding scheme. I began this work under his directions in 1944. The Lesser Florican, whose local migration is still obscure, was the subject of the migratory research scheme. The Florican does not leave Indian limits, but spreads out over the country in various directions during the rains for breeding. In Saurashtra it arrives about the time of the rains and breeds there, and disappears about Dashera and Diwali time, only a few birds remaining throughout the year. Some of the data recorded is most interesting (see Appendix No. III & IV).

In foreign countries ringing has now become a hobby amongst both adults and children, as it does not necessarily involve killing birds but only capturing them in order to study various problems about which we are still ignorant. Birds frequently trapped become used to the procedure and are readily caught for information and released again for more. Many of our local birds such as Bulbuls, Sparrows, Mynas, Crows and even Hawks could easily be ringed, and interesting results obtained regarding their nesting habits and local movements.

LOCAL MIGRATIONS

In India, birds travel from one district to another according to the seasons. This is known as 'Local Migration'. In Saurashtra, we have a number of such migrations. Many of the Falcons and Hawks which breed with us migrate to adjoining areas. For example, the Laggar Falcon leaves its breeding ground soon after rearing its young but we still do not know where and by which way it actually goes. The Common Sandgrouse also has its local movements. The influencing factor is often the desire for better feeding grounds. However, these problems can only be solved by ringing birds *en masse*.

THE STUDY OF MIGRATION BY OBSERVATION

Another method of studying bird migration is by observation. We note down the direction of migration, specifying the name of the bird observed and the date and place. Suppose, for example, we have noted the arrival of the Pied Cuckoos in Bhavnagar on the 25th of May, and another observer records the arrival of the same species at Rajkot on the 1st of June, and birds are recorded at Porbandar on the West coast on 10th of June, we have evidence that Pied Cuckoos arrive on the east coast first, and then go westward, thus

disclosing an east-west migration. The greater the number of bird-observation stations, the more evidence regarding bird movement we obtain, and from this we can more accurately make Migration Charts. However, we must have watchers who can identify birds correctly and who can note down facts in regular registers at the stations allotted to them. One important fact must not be forgotten, and that is that all movements by birds from one place to another are not necessarily migratory, since birds such as Egrets, Crows, and Ducks, alone or in flocks, fly to their regular feeding grounds in the morning and return to their roosts in the evening, and these feeding flights must not be confused with migratory flights. The bird watcher must, therefore, be careful not to arrive at conclusions without making full investigation. The sudden appearance of migratory birds in any place is more valid evidence that the birds are migrating than the continued movements of birds seen every day. Similarly the sudden disappearance of birds will tend to indicate that the birds have migrated. It is by experience of the habits of migrating birds and the study of these that we can determine whether a bird is migrating or not.

In Saurashtra, from August to March, we have migratory birds continuously coming and going, from distant places such as China, Russia, Siberia, Syria, Turkestan and North Africa. At times we find birds which have never been noted in the area before, and which have probably lost their way through being swept by storms or have trespassed beyond their normal furthest limits. This makes Bird Study most interesting.

MIGRATION ROUTES

Migratory birds coming from the north and north-west do not all return the same way, though we can say in general that the majority of our birds do come from and go back in that direction. There is, however, a migratory route from the south-west which is still to be explored. Birds arriving on the western coast of Saurashtra follow the coastline south-eastwards and then northwards for a certain distance, whilst birds arriving on the east coast from the north, proceed southwards, and birds which come from the east go westwards. Here again there is much criss-crossing of birds, especially in the Gulf of Cambay. Most of our locally migratory birds come from the east and go westwards spreading out into Saurashtra where conditions are favourable for them, and they return by the same route.

HOW BIRDS TRAVEL

Most birds travel by night and rest by day, though there are exceptions: as for example, the Crow. While birds are migrating, large stretches of water

or mountain or desert country have to be traversed, and many birds perish on the way. Tired and sick birds which cannot continue their flight are left behind to their fate, and we often witness such solitary birds amongst the Cranes. The formation adopted by certain species like Cranes is a long 'V' with the leader at the apex. Generally the gregarious birds move in mass formation.

Most of the Ducks and Shore Birds which touch the southern coast of Saurashtra spread either way and it is then difficult to ascertain which direction they follow. Those going south reach the coastline at Porbandar, Mangrol, Veraval and Diu and then tend to fly towards the Gulf of Cambay, and north as far as Bhavnagar. Here they cross the Gulf to proceed on their southward journey. Those birds which reach the eastern coast follow the Saurashtra coastline, going towards Diu but the majority cross the Gulf to follow the Gujerat mainland southwards. However, many birds which have reached their furthest limit or those that have commenced their return journey stop wherever food is plentiful and then fly northwards. The Gulf of Cambay is on a very important migratory route. The Curlews seen on the eastern coast follow the coastline and cross the sea on their southward journey. They undoubtedly return the same way, crossing the semi-desert portion north of Bhavnagar known as the Bhal. Both shores of the Gulf of Cambay are ideal Birds Stations. Perhaps the Saurashtra coastline is the more interesting because of the variety of cliffs, rocks, sand and mud found along it. The extensive mud-flats contain plenty of food, and it is on them that thousands of tired Shore Birds take refuge and grow fat upon the abundant sea life. The vegetation on the coastline provides food for thousands of Quails, and the migrating insect life which is found in great numbers on the sea coast attracts insect-eating birds. Hawks of many kinds are seen migrating including the Peregrine Falcon which feeds largely upon the migratory Quail. Harriers, too, follow the migration of Quails. On the western coast of Saurashtra the sea becomes deeper and clearer, and we see more Sea Birds visiting the coastline, but on the whole, birds there are generally scarce.

If we consider the seasons favourable for Bird Life, I would say that Bird Life becomes abundant after the Monsoon and hordes of birds, mostly migratory, are seen during Winter until the end of March, when most of them return to their Summer breeding grounds. During the hot months, from April to July, Bird Life is scanty, except in the forest areas, but as soon as the first rains break, nesting activity begins and we get an influx of local migrants spreading throughout the countryside. Ideal conditions for food and shelter are available as a new coat of green vegetation takes the place of the dry yellow and insect life in abundance emerges from its dormant stage. While talking of Winter Migrants and Summer Migrants, I should say that most of our so-called Winter Migrants arrive during or just after the Monsoon and may

even be counted as Autumn Migrants, whereas the Summer Migrants are those birds which are seen during the hot months until June or July.

COLD AS A FACTOR AFFECTING MIGRATORY BIRDS

In certain areas, intense cold causes a sudden drop in temperature, and prompts birds to travel to a more congenial climate. In Saurashtra we get more migratory birds in a severe Winter than usual, not necessarily because the weather is cold but because the areas to the north of Saurashtra are still colder. Certain birds prefer the cold and remain with us as long as the weather is pleasantly cool but fly northwards as soon as it warms up. Birds which come in contact with the hot land breezes on the eastern side leave early compared with the birds which inhabit the south-eastern and western coastline. The Curlews, Greenshanks, Redshanks, Gulls, Gull-billed and Sea Terns and the like all stay late and we find the Ringed and Kentish Plovers breeding.

On the whole comparatively few species stop in Central Saurashtra in as great numbers as they do on the coastal belt. This long coastline of Saurashtra provides ample opportunity for the study of bird migration. For this purpose we should organise regular Bird-Observation Stations, and in this way much knowledge regarding Bird Life and its problems could be accumulated. Saurashtra, besides being on a migration route, is the Winter headquarters of many birds. Newly arrived birds grow fat during the cold weather, spreading out into the countryside in all directions where food is plentiful. They remain until the instinct urges them to depart and they are then in good fat condition to undertake the long return flight to their breeding grounds. In this way Saurashtra experiences a great deal of local movement of birds covering the whole area at various times of the year.

RAIN AS AFFECTING MIGRATION AND BREEDING

Nowhere does rain play such an important part in the local movements of birds as in India. Hundreds of birds are blown out of their course by storms and rain. The Monsoon results in an abundance of insect life and I have noticed hordes of new birds appearing when such conditions prevail. The sudden change to rainy weather not only brings birds with it, but acts as a stimulus to many birds to breed. It is amazing how quickly birds begin to nest as soon as the first Monsoon rains break. Late Monsoon rains, on the other hand, have a tendency to retard the breeding season for some birds. The Indian Button-Quail, the Rain Quail, the Cuckoos, the Lesser Florican, the Great Indian Bustard, the Babblers, the Ioras, the Red Turtle Dove, the Minivets, the Golden Oriole, the resident Warblers and the Water Birds are

all stimulated to nest by the rains. Naturally the Winter rains have no such effect, though they sometimes cause birds to migrate.

SUDDEN INFLUXES OF BIRDS

The sudden appearance of large numbers of birds in certain years is not uncommon. I have often seen birds arriving in large numbers out of the regular migratory period: for example, the Cuckoos, the Waders and the Larks, and such migration is difficult to account for. Lack of food and water in other areas may be the cause.

In certain years the preponderance of one species over another is very marked. In the Winter of 1931-32 there were more Gadwalls than any other variety of Duck. In the Winter of 1951-52 there was a marked preponderance of Jaçanas, Avocets, and Pelicans.

In Saurashtra the migration and breeding of birds in general follow this pattern:—

- | | |
|----------------------|---|
| June to August | : Mostly local migrations. Breeding of local migrants. |
| August to October | : Arrival of, migratory Warblers, Rosy Pastors and Waders. Breeding of resident Wild-fowl and Water Birds. |
| October to December | : Local migrations; arrival of most of the Winter migratory birds. Commencement of breeding of larger resident Birds of Prey <i>e.g.</i> Vultures and Eagles. Also, breeding of Storks. |
| December to February | : Movements of Winter migrants and lack of local migration. Breeding season of Birds of Prey. |
| February to May | : Departure of migratory birds. Breeding season of Birds of Prey and Woodpeckers. |
| March to July | : Breeding period of most of the resident birds. |

BRIGHT PLUMAGE AND SONG

In birds the males usually have the brighter plumage and display and sing more beautifully, but there are exceptions to this rule. Among the Button and Bustard Quails, for instance, the females are richer in colour and are larger and

SONG CHART

NAME OF BIRD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PIED CHAT ¹	—					—	—	—	—	...
BLUETHROAT ¹	—	—	—				—	—	—	—	—
INDIAN ROBIN	—	—	—	—	—	—	—	—	—	—	—
MAGPIE-ROBIN	—	—	—	—	—	—	—	—	—	—	—	—
BLUE ROCK-THRUSH ¹	—	—				—	—	—	—
PARADISE FLYCATCHER	—	—	—	—	—	—	—	—	—
TICKELL'S FLYCATCHER	—	—	—	—	—	—	—	—	—	—	—	—
RUFIOUS-BACKED SHRIKE	—	—	—	—	—	—	—	—	—	—	—	—
ORPHEAN WARBLER ¹	—	—	—				—	—
JUNGLE WREN WARBLER	—	—	—	—	—	—	—	—	—	—	—	—
INDIAN ORIOLE	...	—	—	—	—	—	—	—	—
BRAHMINY MYNA	..	—	—	—	—	—	—	—	—	—	—	—
BAYA OR WEAVER BIRD	..	—	—	—	—	—	—	—	—	—	—	—
PIED WAGTAIL	—	—	—	—	—	—	—	—	—	—	—	—
SYKES CRESTED LARK	—	—	—	—	—	—	—	—	—	—	—	—
PURPLE SUNBIRD	—	—	—	—	—	—	—	—	—	—
COPPERSMITH	—	—	—	—	—	—	—	—	—	...
HAWK CUCKOO			—	—	—	—	—	—	—	—	—	—
PIED CRESTED CUCKOO				...	—	—	—	—	—	—	—	—
KOEL	...	—	—	—	—	—	—	—	—	—	—	..
RAIN QUAIL	—	—	—	—	—	—	—	—	—
BUSTARD-QUAIL	—	—	—	—	—	—	—	—	—	—	—	—
INDIAN BUTTON-QUAIL				—	—	—	—	—	—	—	—	—
LESSER FLORICAN					—	—	—	—	—	—	—	—
RIVER TERN	—	—	—	—	—	—	—	—	—	—	—	—
LITTLE RINGED PLOVER	—	—	—	—	—	—	—	—	—	—	—	—

¹ Subdued Song.

more pugnacious; they call to attract the males and are ready to fight rival females. The Painted Snipe is another exception and with this species the female, after laying her eggs, entrusts them to the male, who incubates them and rears the young, while the female hunts to attract other males, and thus one female is capable of being the parent of a large family. This reversal of parental duties is extraordinary.

With regard to conjugal relationships amongst birds, we find them as diverse as among human beings. There are birds which pair for life such as the Sarus Crane, birds among which the male mates with a number of females as with the Peafowl, birds which have promiscuous relationship, such as the Koels and Nukhtas, and birds among which the female is polyandrous and visits the males in their own territories, such as the Lesser Florican.

Birds undergo an annual moult, and some birds have a double moult in the year. Most of the migratory Ducks have both a Winter and Summer plumage. The breeding dress is assumed during the breeding season and is the brightest, but when the duck is sitting on the eggs, the male changes back to sombre dress. Similarly the Waders change from Summer to Winter dress and it then becomes very difficult to identify some Shore Birds especially in an intermediate phase. For example, the Lesser Florican changes into a Winter and hot weather dress which is protective during the non-breeding season and during the rains the male assumes a nuptial dress which is black and white and is very conspicuous. Young Birds of Prey, especially, and many other birds as well, have an immature plumage which is totally different from the adult plumage and this at times makes it difficult for the student to understand that they are one and the same species. The Peregrine Falcon and the Indian Shikra are good examples. The young are brown and striped quite differently from the adult birds which are greyish and whitish and barred on the breast with darker markings. The male Paradise Flycatcher assumes his full white plumage after four years. In the case of some Waterfowl, the first year plumage is like that of the adult females.

BIRD SONG

Let us now take a glance at some of our Song Birds. The Magpie-Robin Crested Lark, Singing Bush Lark, Brahminy Myna, Tickell's Flycatcher, Paradise Flycatcher, Fantail Flycatcher, Drongo, the Shrikes, the Green Pigeon, Robin, Blue Rock Thrush, Redstart, Bluethroat and the Warblers, are among our best singers, though the last few species are not always heard as they appear during Winter. Migratory Song Birds arriving in August or September sing softly and melodiously and are heard again just before they depart in March. Ornithologists have been able to record the songs of birds

as they sing them and this allows us to listen to bird songs on gramophone records and to learn to recognise the various birds. It is interesting to note that while the human ear can hear sounds ranging between 16 and 20,000 vibrations per second, frequencies of 5,000 or more do not appear musical. A normal portable gramophone can reproduce frequencies of about 5,000 vibrations per second. There are, therefore, many songs of birds which to us sound very faint or may even seem unpleasant but which in actual fact follow the laws of sound musical theory. Small birds especially are sometimes inaudible at a distance and when they go beyond a certain frequency their songs appear unmusical. However, we can train our ears by listening to songs of higher frequency, and after a time we can learn to enjoy high pitched notes which we completely failed to hear in the beginning. An expert player of the Sitar can hear the resonance of the lower wires as clearly as the main wires, and in the same way we can catch the songs of the smaller birds emitting higher frequency notes in a background of those singing in a lower frequency, and the former are really more pleasant to the ear. We think the Magpie-Robin is the best songster only because the song is more conveniently heard and to some extent we have to judge by this standard. The softer songs which are equally musical are often not heard, and many songs are unheard unless our ears are well trained.

All birds have a singing season, and it is invariably the case that we hear their songs in the beginning of the hot weather. The songs of birds usually coincide with their breeding season. This applies to most of the birds mentioned earlier, but a chart showing other birds as well is given which will give some idea of the approximate time when birds sing at their best.

If one wishes to study the songs of birds more thoroughly, one should try to keep birds in cages and study their songs and tone or else one should go out into the jungle to hear them. The best time to listen to the songs of birds is at the time between just before dawn and just after sunrise, or just before or after sunset. Some birds sing during the night even though they are not nocturnal. It is, however, difficult to recognise birds when singing either at night or from behind some cover. Hence the student should be careful in identifying a bird from its song. An expert Canary fancier, however, will be able to tell the song of his own Canary from among a hundred others without seeing it. Moreover, it is possible to distinguish between the songs of different birds of the same species. Also, birds easily recognise the individual calls of their own species. They have their own style and a bird will sing quickly or slowly according to its individual characteristics, but to distinguish the song of one bird from that of another, we must have a good ear for sounds which is purely a matter of training.

Nearly all birds sing at their best prior to and after mating. The courtship songs are not heard at all times. During the non-breeding period when

the birds are in moult or when they are in Winter plumage, their calls and songs become subdued. All birds have alarm calls to indicate danger, and it is important in Bird Study to recognise these alarm notes, as they indicate a great deal.

HOW TO STUDY BIRDS IN THE FIELD

With a bird book in hand and by reference to the coloured illustrations, the bird student should try to become acquainted with the habits and habitats of various birds. He should become familiar with their songs and calls. This helps considerably because it means recognising a bird before seeing it, and in the jungle we often hear birds before seeing them. A good way is to sit patiently at a vantage point from which one can see the surrounding countryside, and observe the movements of birds. If it be in a forest, one should sit down in a convenient shady place near water. By keeping still and observing the constant movements of birds we are able to understand what they are doing and which way they are flying. It is astounding how fearless birds become for if we keep quiet and be motionless they begin to share our curiosity. In order to study their nesting behaviour one should watch for the indications which are:

- (a) a bird becoming excited by calling or feigning injury and resenting approach;
- (b) a bird flying with something in its bill or picking up food and taking it away;
- (c) a bird suddenly flushed at very close quarters;
- (d) constant flights from one place to another in a particular direction;
- (e) empty egg shells or undigested pellets or castings.

The key to success, however, depends greatly upon whether the student can identify the birds correctly, and on knowledge of their breeding season and their probable sites for nesting. A good bird watcher will in the shortest possible time be able to tell whether there is a nest or not by the mere presence of a particular bird at a particular time and by observing its breeding behaviour. This is a profound study and it needs patience as well as a keen eye. The student should keep a small note book to take down notes about what he sees.

BIRD AREAS IN SAURASHTRA

Let us take a glance at the map of Saurashtra. I would put the Gir Forest and the Girnar Mountain as the best area for our resident birds. It contains a diversity of Bird Life not found in other parts of Saurashtra. In fact its Bird Life resembles that of the wooded districts of Gujarat rather than that of the drier

parts of Kutch. For example, we find the Mottled Wood Owl, Fishing Owl, Crested Serpent-Eagle, Crested Hawk-Eagle, Jungle Bush-Quail, Pygmy Woodpecker, Golden-Backed Woodpecker and White-Throated Babbler and others not seen outside this area except as stragglers. I might add a few more very interesting birds—the Indian Pitta, Crested Honey-Buzzard, Paradise Flycatcher, White-Browed Fantail Flycatcher, Crested Swift and Cuckoo Shrikes all of which breed in the Gir Forest. Amongst the Song Birds the Magpie-Robin is conspicuous. I have never heard so many Magpie-Robins singing regularly as I have in the Gir. The Tickell's Flycatcher, and the Paradise and Fantail Flycatchers have their own musical songs. The calls of the Pitta is heard throughout the day during the breeding season. Most people know the Gir Forest as the habitat of the Indian lion, but few know it as a bird sanctuary.

The second best area of woodland for birds in Saurashtra is undoubtedly the Barda Hills which the old Jamnagar and Porbandar States shared equally. A number of birds breed in this area and not in other parts of Saurashtra except in the Gir Forest. The African Guinea Fowl introduced by the Jam Sahib is well-established in the Barda Hills and may be counted now as a Saurashtra Game Bird. Turning to Shore Birds and Waders, the entire sea-board is unique in being full of Bird Life and the old Bhavnagar State coast, on account of its varied formations, is of a special interest. Moreover, the Gulf of Cambay forms a plexus of the flight lines of migratory birds.

The northern portion of Kathiawar from Dhrangadhra to Okha and then down to Porbandar is in the nature of desert country in which birds of desert type are commonly seen, especially during Winter. Here, the scarcity of resident birds is obvious; for instance, the complete absence of the Jungle Crow from Dhrangadhra and of the Green Pigeon from Northern Kathiawar. Dhrangadhra, however, being on the edge of the Little Rann of Kutch, has records of the Spotted and Imperial Sand Grouse and the Houbara is a regular visitor there, whereas it is a straggler in South and Central Saurashtra.

On the whole, however, Southern and Eastern Saurashtra are the real centres of Bird Life. The Paradise Flycatcher and the Fantail Flycatcher, rare in Northern and Central Saurashtra, are common visitors to Eastern Saurashtra and are breeding species in the Gir Forest. Bhavnagar receives the local migratory birds from the east and the south-east and it is much easier to record the arrival of the new migrants on their entering Saurashtra before they spread out into the Peninsula. I can, however, stress the importance of the entire Saurashtra coastline and of the Bhal district as the main migratory routes. Rivers, lakes, 'wadis' and small patches of 'Babul' and scrub jungle provide the best sites to study Bird Life, resident or migratory, for it is in these areas birds seek shelter and food.

CHAPTER II

A SEASIDE SCENE ON A FEBRUARY MORNING

IT is early morning and the tide is out. The air is cool and pleasing and we can hear the Water Birds calling in the distance. A constant gurgling noise is heard as the water ebbs through the mud-holes.

We walk down to the beach and look out over the mud-flats where the sea has receded. We see Waders, small and large, scattered all over the place. Here, the slate-coloured and white Reef Herons are squawking as they meet more of their kind, or creeping or running briskly on the surface of the ooze as they stalk their prey, the mud-skippers, who dart and slide away in all directions and seek the shelter of their holes on the approach of the enemy. There, the Little Egret, the Large Egret and the Smaller Egret are all seen in search of their breakfast : some are waiting over shallow pools and puddles while others are moving slowly to better their morning's catch.

The Eastern Grey Heron takes his perch on a large stone next to a pool of water and the Curlews are feeding separately—walking fast and stopping now and then to probe their long curved bills in the sand. The mud-flats are strewn with Lesser Flamingoes in their gorgeous rosy-pink plumage. They are all scattered in tens and twenties, often following in single file or seen separately in twos and threes—all the time emitting their nasal calls of *gonk-gonk*.

Small Shore birds are also found in batches. With the help of a pair of powerful binoculars, we can recognise Dunlins, some of whom in their summer black waistcoats and brownish gowns, Sanderlings in their marble white costumes, Curlew-Sandpipers in grey winter plumage and a gathering of Little Stints. On observing carefully, we make out among them the Jack-Snipe-like upper-parts and head of some Broad-billed Sandpipers.

The Large and Lesser Sand Plovers, usually silent, move slowly in their typical gait. One Large Sand Plover we see is in a handsome buffy-pink summer suit. How conspicuous he looks, and it surprises us that he alone should have it on, out of the innumerable friends of his.

Spoonbills are early feeders too, and we see a small group of them waving their flat bills from side to side. A pair of Large Black-necked Storks arrives on the scene and starts walking in stiff regal manner while overhead a flight of White Ibises passes by in a V-formation. Gull-billed Terns are swooping down on their prey, often settling to pick up large insects or small

crustaceans. Curlews and Whimbrels are scattered on the wet sand probing their long curved bills into crab-holes. A sudden upward movement and a crab is hoisted on his petard. A small group of Large Stone Curlews is seen seated on their tarsi amongst a stretch of rocks close to the shore. Passive and restful though they appear, they always have their eyes open for danger.

The tide is coming in fast now and we discern more excitement among birds as they fly in circles and follow the advancing waves and then resettle nearer the shore. These short feeding flights are witnessed now and again as the tide creeps nearer and nearer.

A Grey Plover is feeding quietly at the water's edge and does not join in the active feeding forays of small Shore Birds. A constant trilling is heard as small Waders feed. The *ti-ti-ti-ti* of the Whimbrel is also heard as he flies and the flute-like song of the Curlew is pleasing to the ear.

Suddenly there is a commotion at the water's edge. Small and large Waders take wing in the distance and flocks after flocks are disturbed as if someone has set fire to the entire waterline. Soon we see the culprit, a Peregrine Falcon flying fast and hugging the shore. Presently, she picks up a Wader in her stride like a dragonfly catching his prey and swerves towards the dry beach and alights. We can see her pluck the quarry with fast strokes of her strong beak and start her breakfast. One bird less from the hordes we see on the shore, that's all! The rest soon forget the incident and start resettling.

Painted Storks, with their scissor-like bills open, wade in the sea upto their belly, each bird for itself. As the tide comes in higher, we see more of Gulls and Terns. The magnificent Great Black-headed Gull in full plumage seems a king amongst Sea Gulls. He seems to rule over them, robbing smaller Gulls of their food. Found solitary or grouped together with his kith and kin, he emits his loud *ghaa* or *haaa* in a regal style. Strange as it seems, the Brown-headed Gulls have not yet assumed their chocolate head gear; all the same, they make themselves felt by their numbers.

Handsome Caspian Terns, with their jet black caps and bright coral-red bills, fly one by one gracefully and in a deliberate manner. Their sharp pointed wings and black feet distinguish them easily from the Gulls. The yellow-billed and white foreheaded Red Sea Crested Terns may also be seen flying occasionally. Turnstones, with their black breasts, white foreheads and tortoiseshell-patterned coats are seen probing under small stones and cavities which are being slowly covered by the incoming tide. Soon they will line the beach at the high tide.

There is not much time now for feeding because soon the tide will be full. This the birds seem to realise and although fairly well fed already, their feeding activity is accelerated and seen at its best.

Like a huge Snipe, the Black-tailed Godwit probes its long bill into the muddy sand and, now in water and now on the sands, follows the waves; in haste, he feeds upon the small marine life. A Golden Plover is feeding at the water's edge and joins some Ringed Plovers and Temminck's Stints which are feeding solitarily or in pairs. Redshanks and Greenshanks seem to be less affected by this speeding up of the feeding activity. Having already fed themselves well, they seem to be calm and contented.

A short while and the tide will be full now. The feeding activity has almost stopped. The birds are bathing in the shallow waters of the waves or in small puddles. Some have already commenced dozing and a few are even half way through their siesta. Groups of Redshanks and Greenshanks stand apart from each other like two football teams at half time. A large flock of Little Stints has gathered together. Some are bathing, some are preening themselves and the rest are sleeping. Unlike in October when large numbers may be seen together at high tide, Turnstones are now less in prominence. Ruffs make their appearance and join the crowd of Shore Birds. We see a pair of Bar-tailed Godwits with their slightly upturned bills which have fleshy bases. Some Marsh Sandpipers are wading unconcerned.

It is nearing high tide now. The Curlews have flown to a sandy promontory and have formed a cluster; others soon join their conservative group. They keep the snobbish air of the select and seem to disregard smaller Waders. A small group of Oyster-Catchers flies over the beach and alights on the seaweed-covered rocks. A few of the birds are in full plumage, having assumed their black necks and bright red bills and feet. They are a wonderful sight. I call this handsome pied bird the prince among Waders. When disturbed, it flies low over the surface of the sea. In habits, it is shy and keeps itself behind rocks, hidden from Man's gaze. While feeding, it probes its bill much like a Godwit and at times utters a piping whistle.

On the higher sandy beach, we see a pair of Kentish Plovers; their glaring white foreheads and the broad black breast-bars of the male are conspicuous. They keep in pairs and like to visit dry sands. In the distance, a mass of rose-pink colour is visible, formed by separate groups of Lesser Flamingoes, sleeping while standing on one leg with the other tucked in and the neck and head resting on the back. A sentinel keeps guard over the sleeping hordes, with his head and neck raised.

At last, it is full tide and the sun is beating down on the sands. All the birds are resting now, most of them on one leg and with the head tucked in under the wing. As the waves come nearer and nearer and lap the shore, the birds hop towards the shore closer and closer; some are on one leg, some are knee deep and the rest right up to their tibia in the waves.

The Reef Herons have grouped together on some rocks jutting out in water. An Eastern Grey Heron joins them and appears like a schoolmaster in the midst of his pupils. The Gulls and Terns are on the promontory, others are in the shallow waters of the creek where myriads of small Waders have gathered by now. On the shore, a Brahminy Kite sails over the high tide level and disturbs scores of small Waders. They fly in short circles and resettle further away. Such disturbances are common, often caused by an occasional Harrier gliding by. The Herring Gulls fly past and are not so tame, alighting on the sea sometimes.

Further up the coast near the cliffs, we see a White-breasted Kingfisher and a Green Heron perched close to a cave. A Neophron has his nest of rubbish in a cavity on the cliffs. Rock-Pigeons fly in and out of the cliffs and Sparrows make their nests in the innumerable small holes carved out by the sea. We see an Osprey seated in some lonely corner of the reef. A Blue Rock Thrush bobs up and down and then flies skywards to catch a flying insect. A Peregrine Falcon is occupying its roost under the cliff. Here there is hardly any room for Shore Birds and yet a solitary Common Sandpiper seeks rest among the fallen boulders.

The tide is at its highest now and the waves are lashing against the rocks and cliffs. Shore Birds are either sitting or resting and yet they are never quiet, for some fly and resettle while a few move on the beach. Most of them are, however, having a short spell of sleep by now, closing and opening their eyelids. They have fed themselves well and feel contented. Everything is peaceful and they can now enjoy their well-earned siesta until the waves lose their force upon the beach.

CHAPTER III

AN APRIL DAY IN THE GIR FOREST

HALF an hour before sunrise to an hour after it is undoubtedly the best time for bird-watching during the hot weather. It is, therefore, well that we have started our drive through the forest at dawn while the last calls of the Spotted Owlet are still heard and as the King-Crow has begun giving out his alarm calls.

As we drive through the thin forest, we hear the song of Magpie-Robins. They are ubiquitous in the Gir and their song is singularly melodious. The cover on the roadside consists of almost pure teak, the stems standing bare with only a few dead leaves on them and giving one the vivid impression of rows of hat-stands with caps on the pegs. Now and then we pass by some green and red foliage consisting mostly of 'Karamda' bushes and 'Karapti' (*Garuga pinnata*) trees; a solitary Banyan tree or a 'Kadayo' (*Sterculia*) tree is also seen every few hundred yards before we reach a dry ravine where we stop and get out.

The place greets us with tall trees such as the 'Jambuda' (*Eugenia*), the Chanothi (*Abrus*), the Tamarind and the *Terminalia*. A 'Karanj' (*Pongamia*) in leaf, appearing as if freshly painted with green, is refreshing to the eyes. Under this canopy of trees are thick bushes of 'Karamda', indeed an ideal refuge for bird and animal during the hot hours.

It is now sunrise. A pair of Magpie-Robins is seen seeking food from the lower branches of trees and walking amongst the fallen leaves. Grey Tits in pairs emit their *whickee-whickee* as they fly from tree to tree. Suddenly, we hear the metallic song of the Tickell's Flycatcher and, then, we catch sight of him as he darts into deep shades of the trees and back again to his perch. Then the pleasing and rhythmic song of the White-browed Fantail Flycatcher is heard. Presently, we see him as he flies low in his usual restless manner, turning round and flitting from one branch to another and often descending to the ground to pick up a minute insect. He displays all kinds of tricks such as looping the loop, spreading the tail, etc. He is one of the loveliest of the forest birds. These Flycatchers are usually found in pairs, prancing amongst low branches or chasing each other in a playful manner. What delicacy there is in their flight and movement!

Almost all the birds are seeking food by now and, strangely, it is in the leafless teak and thorny *Acacia* trees that we see most of them, flying from tree to tree almost in relay. We hear the harsh and prolonged call of the Golden-backed Woodpecker. His way of searching food is totally different

to that of the Magpie-Robin and the Flycatchers. He alights near a trunk of a tree and works himself up spirally, stopping now and then to tap for wood-borers; occasionally, he is seen alighting on the ground to pick up a large insect. A golden flash and the red crest is all what strikes our eyes as he flies. Amidst slim branches, we catch a glimpse of the Pygmy Woodpecker as he moves up and down looking for food. His call and tapping are less audible and he seems to take a longer refuge among leaves and twigs. Also, some Small Minivets are seen on the *Acacia* trees situated in the open glade and the dry river bed.

As we walk along the river bed, we come to a drying pool of stagnant water which is alive with small fish, rising to the surface for air. Frogs are croaking to their heart's content all around. At the pool, we disturb a Fish-Owl which suddenly but silently flies away to a tree top. A Green Sandpiper in his grey and dark brown dress flies up swiftly and is in a moment out of sight, emitting his call. A pair of Common Kingfishers is fishing at the pool. These brilliantly coloured birds are the flying jewels of the forest.

From amongst the ruffling noise of dry teak leaves, we hear the alarm calls of the Jungle Babblers and in a moment or two, from the direction from where the calls were heard, a long-tailed mongoose appears chased by a troop of chattering Babblers.

Now, it is almost 8 a.m. and it is best to wait and watch at this pool. We might see some *chital* coming for a drink or a sounder of wild pigs approaching their favourite wallow close by. Also, the birds are returning to the green and shady trees in the ravine.

A Black-headed Oriole emits his harsh Jackdaw-like call. A group of amusing White-throated Babblers sneaks along the bank and flies in single file amidst bushes. A Pitta scurries into teak coppice and is quickly out of sight. One by one, we see birds coming down for a drink or to bathe, even in the smallest water hole. Central Indian Ioras, Spotted Doves, Magpie-Robins and all the rest mentioned above, except Woodpeckers and Owls, are quenching their thirst. What an unexpected assembly!

The Purple Sunbirds are seen and heard everywhere and the harsh call of the Large Cuckoo-Shrike is heard in the distance. A Black-headed Cuckoo-Shrike alights close by with his bill open and the wings half extended. An Iora makes a drumming sound with his wings as he flies. The variety of sounds one can hear in a jungle makes it a very fascinating place.

With the help of binoculars we look across the pool and spot a Black-capped Blackbird amidst dry dung close to a 'Nes', digging for insects in its Thrush-like style of cocking his head, first to the left and then to the right

as if listening. It is rather late for it to stay, which makes one wonder whether it might not breed with us during the Monsoon months.

Sitting in the shade and leaning against a trunk of a tree, and carefully scanning the surroundings, we may catch sight of a slight movement which betrays an animal or bird well-camouflaged in its natural background. There we may discover a pair of rat-snakes entangled in copulation amidst branches of trees, or a Scops Owl which may have been watching us all the time. Or we may spot a Jungle Nightjar resting on an overhanging branch or even a Green Pigeon with only his tail and vent visible. Moreover, it is possible that a Bird of Prey which has remained undetected with its back towards us may betray itself by moving its head or tail. It is amazing how many different birds and animals slowly begin to 'de-freeze' and thus reveal themselves as they gain confidence about a man sitting silently and motionless and blending well with the background.

After waiting for some time by the pool, we leave the place and drive further on. Every few hundred yards or so we see a covey of Jungle Bush-Quail on the dusty road bunched together, or come across a Painted Sandgrouse crossing the road. A four-horned antelope stands like a statue close to the road but bolts after a moment or two. We pass small ravines and on the roadside banks we disturb a White-breasted Kingfisher from his nest-hole who flies away to a tree. A solitary Green Bee-eater is seen perched on a slender twig and a pair of Indian Rollers is seated in thin forest close to habitation.

The next place where we stop is a running stream with its banks covered with *Eugenia* trees. On the riverside are Large and Little Egrets, Red-wattled Lapwings, Common Sandpipers, and Ashy Wren Warblers which emerge from the reed-beds and pour forth their song with the bill pointing towards the sky and then disappear as fast as they had come out. White Eyes are everywhere in the greenery. We may even get a glimpse of a Reed-Warbler as he darts into the reeds. The water is full of large and small fishes and an occasional crocodile makes its appearance; turtles lazily rise to the surface.

As the heat increases and the sun reaches the zenith, Vultures fill the sky. A Crested Hawk Eagle sails in circles followed by a flock of Crows. Crested Honey-Buzzards with their long necks and tails are seen perched close together on leafless trees. If lucky, we may even come across a solitary Crested Serpent Eagle, emitting his double whistle or see him seated on a dry branch of a tree. When this bird soars, its wing-tips curve upwards and it has a distinct broad white band on its tail and wings. It has a habit of soaring high, waiting for reptiles to come out and bask.

As we walk upstream amongst the *Eugenia* trees the overhanging branches of which shade the shallow waters, we flush a pair of White-necked Storks and

a Fish-Owl. Today, the luck is with us because we spot a Mottled Wood-Owl. Of course, Tickell's Flycatchers, Magpie-Robins and Fantail Flycatchers are all there; we cannot lose sight of them even if we wish to because they seem to be everywhere in the woods. However, it is noon already and too hot to walk and, therefore, we better go back to the camp for lunch and rest.

At 5.30 p.m., we return to the woods and wait near a slow flowing stream. The bird activity is at its ebb now, and the birds seem to feel the heat and have their mouths open. Later, however, we shall perhaps see some birds which we missed in the morning.

Here comes a flock of Green Pigeons which settles on a nearby *Ficus* tree situated in an opening in the forest. What a gathering of birds there is all around us: Mynas, Red-vented Bulbuls, Crimson-breasted Barbets, Doves, Tree-pies, and Drongos! A pair of beautiful Blossom-headed Parakeets flies out emitting their characteristic squeaks which betray them from a distance. A pair of Crested Swifts flies low over the teak spreading their sharply forked tails when they glide. Here, near the road where the ground is firm and the forest thin, a Stone Curlew is sitting on its eggs under a solitary stunted thorny tree. A few yards away, a pair of White-bellied Minivets call at each other from the top of *Acacia* trees and a Yellow-fronted Pied Woodpecker utters his *kickerr*.

At sunset, we get a glimpse of a Paradise Flycatcher who bids us good night with his harsh call. This is the time when the Painted Sandgrouse come either in pairs or in flocks for a drink, uttering their *yek-yek* calls. They are even heard throughout the moonlit night. Presently, the nocturnal birds begin to call: the *pink-pink* of the Scops Owl, the *ghoom-ghoom* of the Fish Owl coming from a tall tree on the riverside, etc. A Painted Partridge is heard calling in the distance. As it becomes darker, the *chuck chuck-chuckerrr* of the Common Nightjar catches our ears, monotonous but pleasant. A Spotted Owlet calls close to the camp but the calls of the Jungle Nightjar which resemble the continuous *chook-chook, chook-chook* of a slowly puffing flour engine come from the thicker forests where the Mottled Wood Owl dwells.

On our way back to the camp, a black-maned lion reluctantly gives way to us as we pass by. After dinner, as we rise to go to bed, we hear a leopard sawing in the distance and a sambar giving his alarm call.

Indeed, we had a most interesting day and must now hasten to our beds to snatch a few hours sleep before we begin another glorious day among the birds and animals of the Gir Forest.

Phonetic Scheme for the pronunciation of Gujarati terms.

Vowels :

ā	pronounced as in	Palm
é	" "	Pest
ee	" "	Peel
ū	" "	Put
o	" "	Pole
ō	" "	Pot
ai	" "	Pail

Consonants :

	pronounced as in	Give
<i>Dentals :</i>	g	Machhi (Hindi word)
	chh	Tête-à-tête (French word)
	t	Thorn
	th	Début (French word)
	d	Thou
	dh	Name
<i>Cerebrals :</i>	n	Pot
	ṭ	Thakore (Hindi word)
	ṭh	Mode
	ḍ	

In pronouncing other cerebral sounds such as 'ḍh' & 'ṇa' the tongue should be rounded and touch the upper palate, e.g. 'ḍh' pronounced as in 'Dhow'.

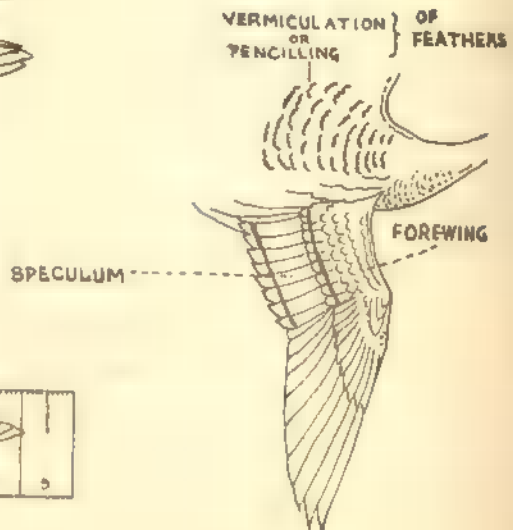
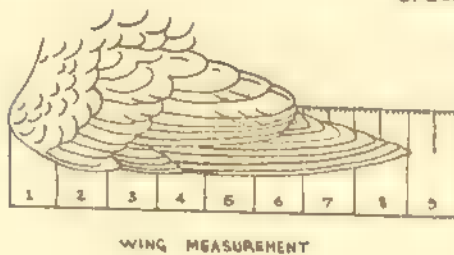
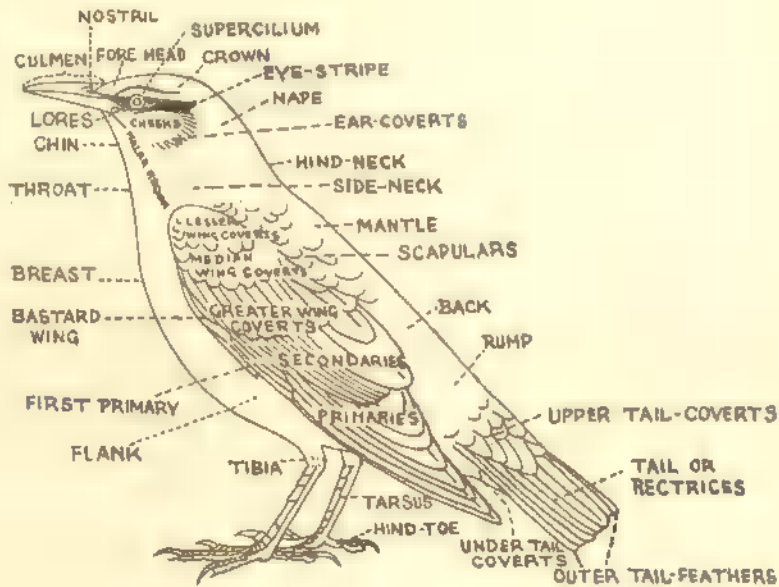
'ṇ' & 'ṇ' followed by consonants are pronounced as in 'Punch' and 'Pump' respectively.

STANDARD OF SIZE

(According to Mr. Sálím Ali)

A. Sparrow (6")	G. Crow (17")
B. Quail (7-8")	H. Kite (24")
C. Bulbul (8")	I. Duck (24")
D. Myna (9")	J. Village hen (18-30")
E. Pigeon (13")	K. Vulture (36")
F. Partridge (13")	

BIRD DIAGRAMS



BIRD FLIGHT

1. Straight flight as in Crow

2. Straight flight with intermittent gliding as in Bee-Eater

3. Gliding flight with intermittent flapping as in Crow-Pheasant

4. Undulating flight as in Wagtail

5. Soaring as in Birds of Prey

6. Ringing flight as in Lark

7. Zigzag flight as in Snipe

--- indicates wing-beats or flapping

— indicates without wing-beats

LITTLE GREBE OR DABCHICK

Gujerati Name—Dūbki

Podiceps ruficollis PALLAS

See Coloured Plate 1.

SIZE. About that of the Pigeon or the Cotton Teal.

IDENTIFICATION. This little bird is adapted for life in water. It is invariably seen swimming. The bird in breeding plumage has a rich chestnut-red head, a greenish-white spot near the gape of the bill, a black bill, red eyes, a greenish-yellow gape and dark green legs. Its body is fat and round, and the tail consists of some soft feathers. The wings are very short and have a small white patch which is clearly seen in flight; the bill is pointed and unlike that of the Ducks. The feet are partly webbed. The Little Grebe is an excellent diver and swimmer. In Winter, it assumes a light buffy-brown plumage mixed with ash-brown, the upper-head being dark brown. Sexes alike.

NOTES. The Little Grebe frequents lakes and all other kinds of waters except small shallow stretches and fast flowing rivers. It is a common bird, abundant during and after the rains, and even the smallest tanks will have a pair or two. It is a slow flyer, taking a long run on the surface of water before rising into the air. It flies very reluctantly and only when hard pressed. Most birds prefer to escape by diving than by flying; they often fly very low over the water, almost running and then diving again a little further away. The migration takes place by night. After the first heavy rains, one suddenly sees them on ponds, rivers and lakes. Some birds remain throughout the year on perennial waters but most of them leave when the pools and small lakes dry up in about February or March.

The call is a shrill *kik* and a long chattering *kirrrer*. During the breeding season, Dabchicks are seen ubiquitously in pairs. The round, fluffy body is covered with fat which protects them from the severest weather. They seldom walk on land but when they do, they do so with a very awkward gait. Birds disturbed at the water's edge silently slip into it like a turtle. Their local movements much depend on the rainfall and abundance of water.

NESTING. Season—May to November, mostly between July and September, depending upon the rains. The nest is a floating pad of aquatic plants, often attached to some reed or plant. Both parents help in nest building and often pull out plants from under water. Four to six white eggs are laid which

soon get stained and become coffee coloured. Both the male as well as the female incubate and on the slightest suspicion, the sitting bird leaves the nest and dives into the water, but before it does so, it quickly covers the eggs with aquatic plants, thus completely concealing them from view. I have seen this taking place on approach of Crows and human beings. The nest then appears just like a small floating pad of inconspicuous aquatic plants. And yet, I have seen the birds slipping off the nest without covering the eggs. The young are striped and are very playful, diving and climbing on their parents' backs. I have often seen them cuddled up in the feathers of their parents. They are excellent divers. As they grow, they turn a light brownish-grey and the head remains slightly striped. The young call out frequently and a pair with young often becomes noisy.

FOOD. Small fish, frogs, and aquatic insects and plants. The birds have a habit of swallowing their own feathers.

BLACK-NECKED GREBE

Gujerati Name—Shyāmagreeva Dābki

Podiceps nigricollis C. L. BREHM

See Coloured Plate 20.

SIZE. Slightly larger than the Little Grebe.

IDENTIFICATION. In Winter plumage, the crown and the upper portion of the head to a line just below the eye are blackish or dark ash-brown, the sides of the neck are buffy-brown, the cheeks, the fore-neck and the lower-parts are white, and the nape is blackish. The upper-parts are ash-brown, the bill is bluish-grey with a black culmen, the legs are greenish and the eyes are orange. In Summer plumage, this bird is known to be much more chestnut and jet black on the head and neck. The student should note the slightly upturned lower-mandible which makes the bill appear slightly curved upwards. In the field, the Black-necked Grebe is difficult to separate from the Little Grebe. The bird has a white bar on the wing.

NOTES. Only one specimen of this bird has been confirmed by me; I came across the bird on 7th November, 1951, and it was first filmed before being collected and sent to the Bombay Natural History Society (See J.B.N.H.S. Vol. 50, No. 3, Page 664). I was bird-watching and saw it at the Ruvapari sewage canal in Bhavnagar. The slightly larger size, the neck held erect while swimming and the dark upper-head in contrast to the whitish lower-head drew my attention and I immediately suspected that the bird was

not a common Little Grebe. This was enough to warrant my taking a short film and collecting it. It was swimming fairly high on the water and diving well and smoothly. Moreover, I recollect having seen earlier some Grebes which, I suspected, might have been this species.

DISTRIBUTION. Breeding in Europe, E. Asia to Baluchistan and Siberia, and wintering south of its breeding range from the Mediterranean to China, Japan and North India. Rare Winter visitor to Saurashtra.

FOOD. Aquatic insects, frogs and fish.

GREAT CRESTED GREBE

Gujerati Name—Choṭīlī Dūbki

Podiceps cristatus LINNAEUS

See Coloured Plate 1.

SIZE. About that of a Pintail.

IDENTIFICATION. The Great Crested Grebe has two tufts on the top of the head which can be erected and form part of the crest. On the side and back of the head, there are long feathers which appear like a ruff; these feathers are dark brown or chestnut, some portions of which are almost black. Nape to upper-parts, dark amber-brown mixed with white feathers; fore-neck and whole of lower-parts, silky white; wings, greyish-brown with much white on the secondaries, the latter forming a conspicuous white wing-bar in flight; bill, carmine-pink with brown on the upper-ridge; eyes, carmine to orange-red. There is a dark stripe running from the eyes to the bill; the rest of portion near the eyes is white. The legs are lobed and compressed, the outside being a dark olive-green and the inside a bright yellowish-green mixed with darker markings. This bird is closely related to the Little Grebe which it resembles in habits. In Winter, the tufts become obsolete and the bright upper-parts assume a dark ash-grey colour.

NOTES. On the whole, this Grebe is not a shy bird but once shot at, it becomes very wary. It visits large and fairly deep sheets of water and is an excellent diver. It leaves the water reluctantly but flies fairly fast when once on the wing; it takes a long run before rising. The silky breast-feathers were once much valued in Europe and, owing to its persecution, it became rather rare over there. Once I saw a bird on the Jasdan lake which swam from one part of the lake to the other where a crocodile was basking. This behaviour was, perhaps, prompted by curiosity on the part of the bird.

DISTRIBUTION. It is found in Europe and Asia, and migrates south of its breeding range during Winter. It has been found breeding irregularly in Sind in Pakistan, and it breeds fairly regularly in Kashmir and in the Himalayas upto the Duars. It is a migrant to Northern India, and I have seen it in Saurashtra. (See J.B.N.H.S. Vol. 47, No. 2, page 385).

NESTING. Season—July to September in Gujerat. A pad nest is made in reeds, much like that of the Dabchick but larger. Bulkley records a pair having bred at Kharaghoda in August.

FOOD. Fish, frogs and aquatic insects.

LITTLE CORMORANT

Gujerati Name—Nānō Ja! Kāgdō

Phalacrocorax niger VIEILLOT

See Coloured Plate 8.

SIZE. Somewhat smaller than the domestic Duck.

IDENTIFICATION. Similar in shape to the Large Cormorant but much smaller. It is all black with some greyish feathers on the wing which are visible at closer quarters. It has no crest but a stout, and not very long, hooked bill. The black colour of the body shows a greenish-blue sheen when seen in the sun. The stout legs are black. Young birds have a white throat and brownish lower-parts mixed with white. Sexes alike.

NOTES. The bird is less shy than the larger species, sometimes becoming quite tame in the proximity of habitation. It is often seen singly on small garden ponds, dhobi ghats, and the seashore. Near lakes and rivers, however, the birds flock together in large numbers, and I have seen flocks of 60 to 100 birds. They hunt in groups, driving the fish towards the shallower water. In deep waters, however, they dive actively in search of shoals of small fish. On the whole, they are more active than the Large Cormorants. Just at dawn, one may see these birds flying miles upstream to fish on some selected pool or part of the river. Those entering large lakes can be heard as they swoop down to the water, the wings making a swishing or *shshshsh*-like sound. They make a loud splash as they land clumsily on the water; soon after that they start diving for fish. I have watched one party after another arrive and start feeding in this manner. After feeding in shallow streams or small pools, they bask at the water's edge if undisturbed, and dry themselves by stretching out their wings, but in places of imminent danger, or when disturbed, they head for larger

stretches of water such as lakes. In the evening, too, they fly to their fishing areas and return at dusk to their roosts. While flying, the long stiff tail, the angular wings and the outstretched neck identify the bird. When seen in flight, it is reminiscent of a half plucked chicken.

DISTRIBUTION. The whole of India including Saurashtra, Kutch and Gujerat. Resident and common. Outside India it occurs up to the East Indies.

NESTING. Season—August to November. The birds nest on trees in small colonies. The nest is made of sticks. Three to five eggs are laid which are similar to those of the Larger Cormorant except that they are much smaller, narrower and slightly creamish in colour.

FOOD. Small fish and aquatic beetles. Flocks of these birds readily fly to pools which are drying up in the hot weather; they enter shallow water where the fish have little room to escape. In this way, flocks of these birds can destroy fish life in no time. They are, therefore, harmful to small fish and fry. Like all Water Birds, they have an active oil gland from which they grease their feathers to maintain an oily coating as a preventive against effects of water, and thus the feathers always appear glossy. They feed very early in the morning and again in the evening. They sit very low on the water and, sometimes, only their necks are visible over the surface. The food which is caught under water is brought to the surface and then swallowed.

INDIAN LARGE CORMORANT

Gujerati Name—Jaḷ Kāgdō

Phalacrocorax carbo sinensis SHAW

SIZE. About that of a large domestic Duck.

IDENTIFICATION. A large, long-billed and long-necked black bird with a glossy bottle-green and purple plumage when seen in sunlight. In breeding plumage, there is a crest on the head the feathers of which are mixed with white. Facial skin and pouch, yellow; legs, black; feet, webbed; eyes, black; tail, moderately long and black; a white patch on the flanks present. In breeding plumage, the eyes are green, the eyelids are black, and the pouch is green and granulated. Immature birds are brown above and white below. The body-pose of the bird, when sitting on the ground or tree, is almost vertical. While swimming, the head alone is held erect, the body being parallel to the water and sometimes submerged. The long bill is hooked at the end and well-adapted to catching fish. The Cormorant is a large bird with excellent

powers of swimming and diving. The flight is fairly strong. While diving, the bird is known to go as deep as 60 feet. The call is a hoarse gagag-gagag.

NOTES. These Cormorants are found on lakes and rivers, and also in coastal areas. But their chief home is large stretches of freshwater holding plenty of fish. The feathers are oily to keep off the effect of water in which they spend most of their time. They dry themselves in the sun, keeping their wings outstretched. They may be seen basking for hours together on a stone or a tree which is standing in water.

DISTRIBUTION. Practically the whole of Asia and India. Resident and locally migratory in Saurashtra. Common. Found in Kutch and Gujerat, also.

NESTING. Season—August to February. The birds generally nest in colony, but one or two pairs are often found nesting on solitary trees. Their favourite site is a small island on a lake. They also nest on thorny trees standing in water; in this way a dozen or more nests may be found close together. The trees used year after year become leafless and 'white-washed' with droppings. The nest, which is made of sticks, is oval and rarely deep. During the breeding season, the birds are noisy and, when approached closely, they dive into the water to re-appear at a great distance. However, some brooding birds allow a boat to come as close as 10 yards. Three to five longish and skim-blue eggs are laid, having a chalky-white texture. Nestlings are smoke-coloured. These Cormorants often nest in company with Egrets, Herons, and Spoonbills. On one occasion, I saw an Imperial Eagle threaten a Cormorant colony. At each attempt made to capture a bird, the whole colony would rise on their legs, stretching their necks and flapping their wings vigorously and calling loudly. The Eagle made repeated attempts but could not muster enough courage to catch hold of a bird which, to my mind, was an easy thing to do. However, on another occasion, I saw the same kind of Eagle succeed in flushing a frightened bird from a colony and picking it up as the bird tried to reach the water.

FOOD. Mostly fish which are caught under water. Aided by the wings and webbed feet, the birds swim rapidly under water, the tail acting as a rudder. Their method of fishing, particularly in smaller pools, is to splash the water in order to drive the shoals of fish to a particular area where they find it easy to hunt. It is most interesting to witness a simultaneous movement when a large bunch is fishing. Because of their expert skill in catching fish, the Chinese, the Assamese and the Burmese train them for the purpose. While fishing during the breeding season, the birds become very destructive and keep the pouch filled with small fish. On the whole, therefore, this Cormorant is a harmful bird where fishing preserves or sacred tanks are concerned. I have extracted two to three large 8 to 9 inch long fish from a bird's pouch.

INDIAN DARTER OR SNAKE BIRD

Gujerati Name—Sarpagreeva

Anhinga anhinga melanogaster PENNANT

See Coloured Plate 18.

SIZE. About that of a small Duck.

IDENTIFICATION. In general appearance, the bird is very much like the Cormorant, but easily distinguished by its long, slender and snake-like neck and head. Head and neck, pure brown with a white stripe running downwards from the eye to the base of the neck; rest of the body, black; upper-parts and wings, mixed with grey feathers; tail, fairly long; eyes, yellowish; bill, brownish to dark brown; legs, black. In habits, the Darter is well-adapted for life in the water, and its diving capacity equals that of the Cormorant. When swimming, most of the body is under water and only the long neck and head are carried high. The bill is sharp and pointed like a spear, and is not hooked like that of the Cormorant. Sexes alike.

NOTES. The Darter is seen on large lakes, rivers, and seaside pools where it is either found fishing or basking while perched on a tree or stone. At night, the birds roost on trees, preferring those standing in water or on an island. Before roosting, they are often seen circling. The wing-strokes are fairly rapid but the flight is not very fast; it is a combination of gliding and flapping. Unlike the Cormorant, they do not feed or swim together; on the whole, they are pugnacious and solitary, not allowing others of their kind to enter their fishing grounds. When suddenly disturbed from trees, they invariably dive into the water with a splash and disappear completely under water; but when frightened while swimming, they often take wing, flapping heavily to take off from the water. They are shy birds, always seeking seclusion. They invariably keep to large expanses of water.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common. Outside India it is found upto the East Indies.

NESTING. Season—May to November. These birds nest either in colony or separately on trees standing in or next to water. The nest is made of sticks and looks rather like an old Crow's nest. Three to five eggs are laid which are skim-blue and chalky. The nest is placed fairly high up and it is usually difficult to reach. When approached, the parent birds and their young often dive straight into the water and are out of sight in an instant, or else they fly away. They are shyer than Cormorants. Fledglings have a rich brown colour which replaces the whitish-grey of the adult birds.

FOOD. Small fish which are captured by diving under water. The birds can dive for a great distance, that is, 50 yards or more. Their method of catching

fish is by thrusting the spear-like bill and impaling it. When the fish is caught, the bird rises to the surface and flicks it into the air with a jerk of the head, catches it in the bill and, then, swallows it immediately. Thus, a wriggling silvery fish may often be seen held in the bill, or pierced, and then, passing down the slim throat. When about to dive, the snake-like head is slowly drawn in and, with a downward and forward movement, the Darter silently submerges into the water. The webbed feet are mostly used for swimming underwater. At times, when it is breaking the surface, only the head and neck are visible, giving it an appearance of a water-snake. When flying, the neck is partly drawn in and a bulge on the chest is then visible, misleading one to believe that the crop is full. The Darter does not hunt in groups, and hence, it may be considered less harmful than the Cormorant. However, there is no special time for fishing, for the chase may go on the whole day until the bird is satisfied. I have seen it fish even well after sunset. It is definitely harmful to small fish and fry.

WHITE OR ROSY PELICAN

Gujerati Name—Gūlābi Pēṇa

Pelecanus onocrotalus LINNAEUS

See Coloured Plate I.

SIZE. Larger than the Vulture.

IDENTIFICATION. A large white bird with a very long and broad bill having a bag-like pouch under the lower-mandible. While swimming or walking, the head is held high and arched from the base. The feet are stout, short and webbed, much like that of a Duck. The tail is short but the wings are comparatively long. From a certain angle, one may see a rosy tinge on the plumage which is absent during Winter. The adult plumage is rosy-white with black primaries. The eyes are bright red and the legs pinkish-yellow. The immature birds are earthy-brown above and whitish below. Intermediate phases in plumage between immature and fully adult birds may be seen, too, which have buffy-brown upper-parts and white lower-parts. Specimens collected can be recognised from *P. crispus* by the feathers of the forehead terminating in a point. In the field, the slightly curved bill and the colour of the legs should be marked. Sexes are alike but the female is much smaller in size.

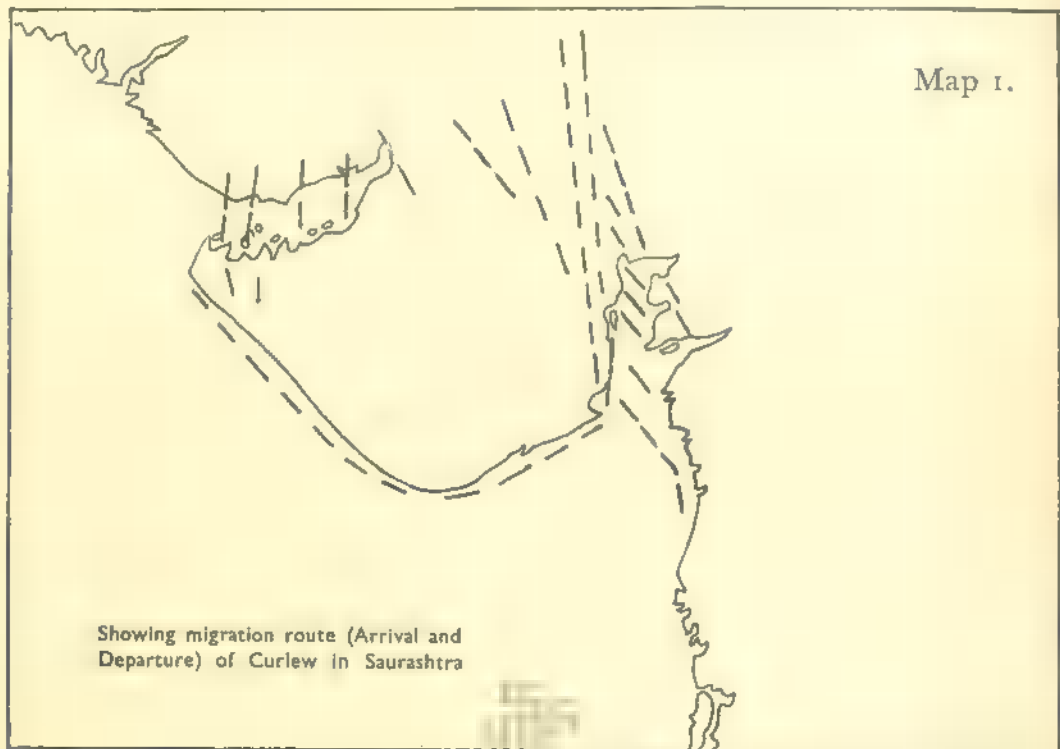
NOTES. The Pelican is found on our creeks, backwaters, rivers, and brackish and freshwater lakes. However, it has a preference for the coastal areas. It likes seclusion and does not, as a rule, permit close approach. If closely observed, it can be seen that the upper-mandible, which is of a plumbeous colour, has a

curved hook or nail at the end; this nail is often brightly coloured red or orange and is used for gripping food. The lower-mandible is thinner and has a yellow loose skin, or pouch, which serves as a bag to trap and keep the food, particularly during the breeding season. During the hot hours, the birds bask in the sun, sometimes spreading their wings to dry, or go to sleep in a group at the water's edge, always keeping a sentinel to look out for danger. This Pelican is a Winter migrant to our coast and also wanders inland. It is a very graceful swimmer. While resting, the head is often placed on the back, making the bird appear boat-shaped. Large flocks of over 100 birds may congregate on our shores, creeks, and lakes before returning to their breeding areas. However, the normal number seen is from 2 to 50 and sometimes you may even see a solitary bird. Although heavy in weight, the bird has powerful wings and, with hardly any run, it can lift itself buoyantly into the air with the help of strong strokes. After reaching height, it circles and soars into the sky with ease. With its long wing-span, it makes full use of rising air currents. It is, indeed, a marvellous sight to see these grand birds in flight with their necks drawn in and appearing like giant Vultures. It is amazing how quickly they can attain great heights with intermittent flappings, having caught the air currents. Equally amazing is it to see them glide just above the surface of water. Sometimes, it is noticed that the birds keep their wings slightly lifted before taking off. The Pelican has much fat on its body, and in some parts of the country, the people kill it and extract oil from it. The fat is used as an application for rheumatism. March to April appears to be the best time to observe these birds on inland lakes as they, then, congregate in large groups. But on the mouths of rivers, creeks and lagoons any time after October is good enough.

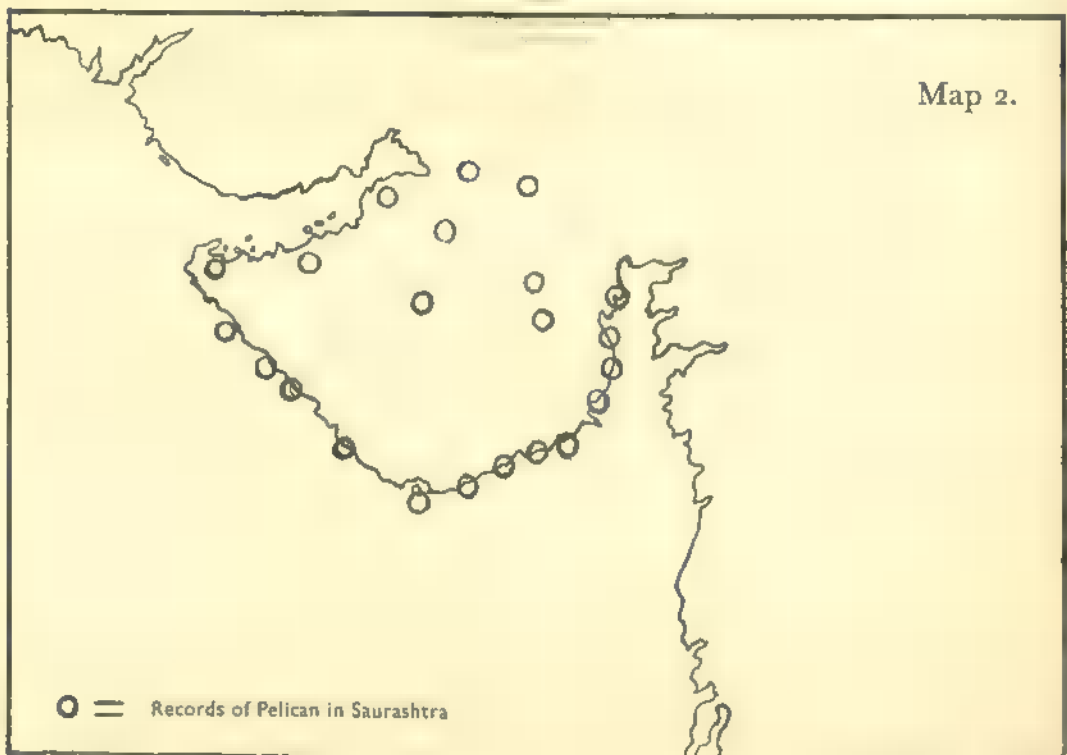
DISTRIBUTION. Breeding in Hungary and Central Asia, Iraq, and Persian Gulf, and migrating south in Winter to Africa, Persia and India; not uncommon in Saurashtra, Kutch and Gujerat. Arriving about October and leaving in April.

FOOD. Mostly fish and prawns. The way in which they feed is most interesting. A group of birds will form a line and swim with their mouths open, driving the fish into a corner, often forming a circle and thus giving less room for the fish to escape. In some specimens I collected, the pouch was full of small fish and prawns.

Map 1.



Map 2.



DALMATIAN OR GREY PELICAN

Gujerati Name—Chotili Péṇa

Pelecanus philippensis GMELIN

See Coloured Plate 1.

SIZE. Larger than the Vulture.

IDENTIFICATION. This is a large greyish-white Pelican without any rosy tinge. The eyes are pearl-white to grey and orange in the breeding season. The bill is plumbeous and mottled; it has a hook, or nail, at the end which is coral-red or yellowish. The bird is easily recognised by its plumbeous-grey legs, and also by its pouch which is yellow to deep orange or coral-red in the breeding season. Moreover, the feathers of its forehead end in a transverse line whereas those of the last species end in a point. If carefully observed, a crest at the nape is evident. This species is larger than the White Pelican. The quills are black with white bases; another distinguishing feature, if the bird is close enough, is the feathers of the rump which have black shafts. In some birds, the fore-neck is yellowish. Young birds are browner on the upper-parts. Sexes are alike but the female is slightly smaller.

NOTES. This Pelican is found on our coastline and inland waters, being always partial to tidal breakwaters, creeks and mud-flats. It is the species most commonly met with. Some years it is plentiful while less common in others, the White Pelican being more often seen. The long bill and the shape of the head are noticeable in the field. One may come across either solitary birds or pairs or groups, but they do not gather in such large numbers as the last species. Captured birds lunge forward and snap their mandibles with a loud clap like that of a cricket bat hitting a ball.

DISTRIBUTION. Breeding in Southern Europe from Hungary to Dalmatia, and upto the Caspian Sea, Persia and North China, and migrating south of its breeding range to India and Saurashtra. Not uncommon. A regular migrant on coastal areas. The earliest record is October 21st. Found in Kutch and Gujerat.

FOOD. Fish and prawns as well as other aquatic life. Pouches of some of the birds collected revealed worms, beetles, prawns, cat-fish and other small fish. These Pelicans feed in creeks and brackish water and often enter freshwater lakes. The mode of feeding is just the same as in other Pelicans. While feeding, they often slash their bills sideways in order to entrap small fish. On the sea coast and lakes, they preen themselves after feeding and take their siesta on sand bars, much like other Pelicans. A group of Pelicans can swim fairly fast while feeding and, if one sits motionless near the water, they will pass fairly close. But this should not make us underestimate the power of their eyesight for they are alert and change their course immediately when alarmed. After feeding, they may be seen floating with their heads and necks resting on their backs. Their movements are most interesting to watch.

BLACK-WINGED KITE

Gujerati Name—Kapāsi

Elanus caeruleus vociferus LATHAM

See Coloured Plate 4 and Plate 34.

SIZE. About that of the House Crow.

IDENTIFICATION. A grey and white Bird of Prey, quite unlike the Common Kite in aspect and habit. In fact, it resembles the Harrier in some ways and the Kestrel in others, the former in its method of gliding and the latter in its habit of hovering. The upper-parts are pale grey with a patch of white on the forehead which distinguish it from a distance. There is also a black patch on the wing-coverts, and the primaries are dark grey. The round head and the short curved beak give it an Owl-like appearance. Legs, orange; eyes, red with a short black streak over them. The short grey and white tail appears entirely white from a distance. The bird is seen in open scrub country and cultivation, either settled on top of a tree or flying in its buoyant style. The flight is slow and graceful; while gliding, the wings are kept wide in a V-shape. It hovers while hunting and, when a prey is sighted, it descends perpendicularly, parachute-fashion, with its legs stretched out and its wings held back. The dark wing-quills sharply contrast with the light under-parts.

NOTES. I cannot say that this Kite is common, and yet it is, at the same time, not at all rare. During the breeding season, I have seen it visit the same areas each year, but at other times one is not sure of coming across it. It has a habit of moving its tail up and down while perched: this is specially noticeable during the breeding season when it can be heard calling frequently. It is not very shy though it seldom enters the precincts of towns. But for its small size and habit of hovering, it could easily be confused in flight with the adult male Pale Harrier. While flying, however, the short pointed wing-tips and the short stubby tail easily distinguish it.

DISTRIBUTION. Most parts of India including Kutch, Gujerat, and throughout Saurashtra. Resident and not uncommon. Local migrant.

NESTING. Season—Generally from May to August. But I have come across nests with eggs in September, October and November, and some birds may even nest upto February. I have found nests in scrub jungle as well as in open country. They are placed not very high up but are fairly well-concealed. In mixed scrub jungle, the bird has a preference for the trees of *Balanites* and the nest is about ten to twelve feet high. In open country, solitary trees of thorny kind are preferred, and rarely does one find a nest amidst a group of 'Neem' or 'Ficus' trees. When the eggs and nest are threatened, the parents become fearless and make every attempt to protect them by screaming and diving just

over the intruder's head. The House Crow is a great enemy of these birds and they are harassed and mobbed during the breeding season, especially in the neighbourhood of their nests.

FOOD. This species chiefly feeds on grasshoppers, beetles, mice, lizards and small snakes. It hovers at a fair height while hunting and maintains that height much more consistently than the Kestrel. While hovering, it often descends vertically and, then, stops in mid-air, all the while watching its prey; and, then, if the latter has not moved, it drops down on it, much like a weighted handkerchief. Some birds are not shy and allow a fairly close approach. This Kite is an early morning and late evening feeder. It may be seen hovering late after sunset. It has a characteristic manner of turning in the air after hovering and of resuming its flight with quick wing-strokes. It seems to me to be largely beneficial.

CRESTED HONEY-BUZZARD

Gujerati Name—Madhiyō

Pernis ptilorhynchus ruficollis LESSON

See Coloured Plate 3.

SIZE. About that of the Pariah Kite.

IDENTIFICATION. In this species, the adult and immature plumages vary considerably. There are a number of adult colour phases: very light, intermediate and very dark. The adult male has dark ash-grey head with the crest darker and some white feathers showing. The upper-parts, including the wings, are dark greyish-black with bands of white feathers showing here and there; the rump is whitish. The wings are lighter grey, especially the flight feathers; the tail has a white tip and a subterminal black band, and another black band above it between which there is much mottling of grey and cream. The eyes are scarlet. The lower-parts are rufous to rich reddish-brown and barred on the flanks. The adult female is generally more brownish above, intermingled with grey and brown, but the lower-parts are rufous with more of white showing; also, the tail is browner and much more barred than in the male, and, usually, the eyes are golden-yellow. There is but little difference in size between the sexes. Immature birds are browner above and khaki-brown on the lower-parts, and have more of white on the rump. Some immature birds, however, have the whitish lower-parts streaked with brown or light rufous, striped with dark brown. The eyes are yellow to greenish-yellow. In hand, the adult bird is clearly identifiable by the scale-like feathers of the head. From a distance, it appears brownish-grey with fine barring of grey-brown on the under-parts. The

dark grey head and the longish neck are of uniform colour. The beak of this bird is comparatively small and weak; the feet are small and the toes are slender and longish. The legs in both sexes are feathered only on the frontal upper half. The crest is not always visible. These birds are not uncommon and usually keep to well-foliaged trees. They are a bit shy but can be observed at a fair distance. When disturbed, they have a habit of suddenly flying out of a tree and going into another. The outstretched neck and the peculiar way of looking back at the intruder readily identifies the bird in flight. The flight is Kite-like, consisting of heavy flaps, but it is not graceful nor does the bird glide well. It alights on trees clumsily with a sudden jerk, spreading its tail and wings. The head of the adult bird is reminiscent of a Turkey's without its loose skin above the bill. Breeding pairs emit a whistling call and may be seen close together.

NOTES. The Honey-Buzzard visits gardens, forests and wooded hills, and is fairly common, resorting to large foliaged trees. After the rains, it stays in the countryside upto almost mid-Summer. While soaring, it can be recognised by its entirely barred under-parts, and especially by the tail which has two conspicuous black bands. In the lighter phase, these bands are clearly visible: the one near the tail is V-shaped. In overhead flight, the bird can be distinguished from Eagles by its relatively longer tail.

DISTRIBUTION. The whole of India including Kutch, Gujerat, and Saurashtra. Local migrant in all parts of Saurashtra but resident in the Gir Forest. Commonly seen just after the Monsoon and throughout Winter.

NESTING. Season—May to August. The nest is much like a Kite's and placed high, usually on a tall leafy tree. The building of nests sometimes commences as early as April. Two eggs are laid which resemble those of a Kite though some eggs are brick-red all over.

FOOD. Mostly honey and honey-combs as well as bees and their larvae. The Honey-Buzzard is, therefore, destructive to bee-farming. It is a very observant bird, watching the movements of the bees. After it has located a hive, it slowly glides down and, alighting on the bush in which the hive is situated, spreads its wings and then turns to reach for a favourable entrance, disturbing the bees while so doing. It then pecks at the comb, feeding on it and the honey until satisfied. It seems to take some time over this procedure, turning its head and neck frequently but slowly to wipe the bees off its face. After this, it seeks the nearest cover to rest in.

COMMON PARIAH KITE

Gujerati Name—Samaji or Cheel

Milvus migrans govinda SYKES

See Coloured Plate 4.

SIZE. Smaller than the Vulture. Length, about 24".

IDENTIFICATION. A brown Bird of Prey easily identified by its long forked tail. Eyes, brown; legs and feet, yellowish, the former being only partly feathered. The Common Kite is seen everywhere and is a scavenger. It glides gracefully in the air, but the flight is a heavy flapping and rather a jerky one. The forked tail acts as an excellent rudder and is constantly in use while flying. At mid-day, Kites are seen soaring high in the sky. Immature birds are darker, having the under-parts streaked with creamy-white; the feathers of the upper-parts are edged pale. In some, a light patch under the primaries is visible. The call note is a long, shrill and penetrating whistle.

NOTES. This bird is not shy, allowing close approach. At times, it is bold enough to snatch away food from a dish or hand, swooping with remarkable grace. This ubiquitous Kite perches and roosts on trees and buildings, and is nearly always seen close to habitations on which its life mostly depends. While perched, the body-pose is vertical and the long wings almost reach the tip of the tail. Owing to its capacity to gain height quickly in the air, Indian falconers, since ancient times, have trained the Saker Falcon to pursue it, seldom using two birds, and it is then a race for height, and thus excellent 'ringing' flights can be witnessed. Even after the Falcon has gained height above the Kite, it is not all over, for there is much swooping until the Falcon succeeds in striking a fatal blow. Only the best Falcons succeed in capturing a Kite, and even after it is caught, it defends itself formidably with its sharp claws. As a rule, no Bird of Prey attacks the Kite except when it is carrying food, in which case the attacker, soaring high above, swoops down compelling the Kite to release its food which is caught in mid-air. An aerial display often occurs when a Kite chases another Kite to rob it of its food. Kites soar and search for their food almost throughout the day, having a tendency to lessen their height towards the evening for roosting at sunset. And yet I have seen Kites soaring even after sunset at fairly great heights; but this is unusual. During the breeding season the pair calls to each other frequently and copulation takes place after the female has whistled to the male. This call is reminiscent of the whimpering of a timid dog when afraid of being beaten. With practice, the slightly smaller male may be distinguished from the female when in the air.

DISTRIBUTION. The whole of India and Saurashtra. Common and resident.

NESTING. Season—October to March, rarely upto April. The nest is a mass of sticks and rubbish lined with soft material. The birds bring material to the nest in their beaks and feet. The nest cavity is quite deep and the whole nest is about a foot wide. Old nests are utilised and rebuilt every year and, therefore, it is not unusual to come across rather massive nests. Two to three, and rarely four, eggs are laid. They are white with reddish splashes, but some are all white. Most eggs become dirty after incubation has advanced. The nest is generally placed on a fork of a branch of a large tree, fairly high up in most cases. The bird is commonly found nesting on suitable trees close to or inside cities, villages and gardens, or in the countryside. I once found a nest on the top of a chimney which was not being used at the time. But when the cold wave came, the occupants of the house started a fire and the Kites had to vacate. I have often seen a juvenile Kite carrying a stone in its feet and playing with it.

FOOD. The Common Pariah Kite is a true scavenger, feeding upon meat of all types left over from the butcher's shop or kitchen, or upon any rubbish thrown away. It sometimes catches mice and lizards, and I have seen it on the sea coast feeding upon mud-gobies, crabs and dead marine life washed ashore by the tide, much like the Brahminy Kite. During drought, they feed upon dead fish, also. The birds seen returning from the shores are often very muddy and can be mistaken for Marsh Harriers. As they feed upon waste matter, they help to keep the villages and towns clean. During the rains, they readily feed upon termites, grasshoppers, locusts and other insects which they catch in the air or on the ground. They are destructive to chicks, ducklings and young turkeys; otherwise they seem to be beneficial.

LARGE INDIAN OR BLACK-EARED KITE

Gujerati Name—Kāshmiri Cheel or Shīālū Samaḷi

Milvus migrans lineatus J. E. GRAY

SIZE. About the same as the Pariah Kite.

IDENTIFICATION. It is distinguished from the Common Kite by its slightly larger size and the lighter colour of its upper-parts which are generally tawny. The lighter colouration resembles that of the Tawny Eagle with which this Kite can be easily confused from a distance. However, some birds are much the same colour as the Common Kite, or rufescent on the axillaries and the tail. The forked or concave-shaped tail immediately separates it from Eagles. A reliable field character is a patch of white across the primaries on the

underside of the wing which can be observed when flying. The student should be careful to identify this characteristic correctly, for a white under-wing patch is also seen in immature Brahminy Kites which are reddish-brown; hence he should not solely rely on the white patch without taking the colour of the bird into consideration. Moreover, some Common Kites have a light under-wing patch which almost resembles the conspicuous white patch of the Black-eared Kites. At times, the black ear-coverts are distinctly visible. In habits, this Kite is more of a coastal bird, working its way inland up the streams and rivers. In some birds the feet are yellow while in others they are grey.

NOTES. These Kites appear during the Winter months, and are generally seen on the sea coast, but they are not really rare. This species is generally overlooked as few people are aware of its occurrence. It is no doubt slightly larger and shyer than the Common Kite. It is near fishermen's huts on the seaside that the student should look for it; there he is certain to find it.

DISTRIBUTION. Found breeding in Northern Asia south to the Himalayas. Migrating southwards during the cold months into India including Kutch, Gujerat, and Saurashtra. Not uncommon.

FOOD. Same as the Common Kite.

BRAHMINY KITE

Gujerati Name—Brāhmaṇi Cheel

Haliastur indus indus BODDAERT

See Coloured Plate 4.

SIZE. About that of the Pariah Kite.

IDENTIFICATION. A very common Kite found all over the country. The head and breast are white; when seen closely, the feathers have a thin black shaft-line. The upper-parts, wings, tail, and the rest of the lower-parts are rich reddish-brown, almost chestnut. The tail, instead of being forked as in the Common Kite, is rounded. Eyes, reddish-brown; legs, yellowish. In size it is, if anything, slightly smaller than the Common Kite. Young birds are uniform rufous-brown with white patches on the lower sides of the wing. This characteristic should not make one confuse this bird with the Black-eared Kite, a larger, tawny-brown bird with a forked tail.

NOTES. It is seen in towns, villages and all over the countryside where there are lakes and rivers. Also, it is fairly common on the sea coast where it is often seen gliding along the coastline. The flight is similar to that of the Common Kite, but the bird does not soar as high nor are its movements in the air so

graceful. It emits a guttural call and a cat-like *meōw*. These Kites are often seen in pairs, and at sunset, they may be found roosting with Common Kites in large trees. I have seen over a dozen birds together. They are slightly shy than the Common Kites and comparatively less common, but it is not rare to see them on the seaside.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common.

NESTING. Season—December to March, most birds laying in February. The nest is a typical Common Kite's nest but perhaps not as large. It is made of sticks, and a variety of odd material such as rags and wool is often used; it is sometimes lined with mud. Most nests are placed fairly high on large trees but some are as low as 12 to 14 feet. They are placed in forks of branches. The favourite trees are the 'Neem', the Banyan, the 'Pipal' and the Tamarind. Nests in plantations are placed fairly high up, and often on palm trees. The eggs number two to three and are white splashed with reddish-brown.

FOOD. The Brahminy Kite is a scavenger, feeding on waste found close to villages and towns. On the sea coast, it scans the shore while gliding and flapping slowly over the high waterline and picks up a variety of dead marine life which has been washed up. It also manages to catch mud-gobies and crabs, and endeavours to harass Hawks to give up their prey. During the moulting season (June-July-August), it preys largely upon bloodsuckers, lizards and insects, hunting more inland.

GOSHAWK

Gujerati Name—Bāz ♀ Zurrā ♂

Accipiter gentilis LINNAEUS

See Plate 34.

SIZE. About that of the Kite.

IDENTIFICATION. The adult Goshawk has grey upper-parts, including the tail which is barred. Lower-parts, whitish, barred with dark greyish-black; a black shaft line present on the breast feathers; head, grey or ash-grey but whitish on the lower-face. Under tail-coverts, white. Wings, short and curved. Tail, long and barred. Eyes, orange to blood-red with a white supercilium proceeding to the nape; legs, yellow; tarsus, unfeathered and scutellated in front and behind, and reticulated on the sides. In immature plumage, the bird varies from khaki to cinnamon-brown on the upper-parts, and pale fulvous to rufescent on the lower-parts, the breast and under-parts being streaked with

dark brown. Eyes and legs, yellow; inner and hind claws, large. The Goshawk is a shy bird resenting close observation. It keeps to well-wooded forest areas. Sexes alike.

NOTES. The Goshawk has rounded, short wings covering the base of the tail; again, it has a fast flight, keeping close to the ground like the Sparrow-Hawk. The immature female may be mistaken for an immature Honey-Buzzard or for a Crested Hawk-Eagle, and so the student should mark the supercilium, rounded head, lemon-yellow eyes, partly feathered legs and the flight of the bird. The adult male is much smaller than the female and, though greyer, looks like a magnified female Sparrow-Hawk. I have only once seen it in Saurashtra, and that too only in the Gir Forest during the Winter of 1948. In the Gir, I consider it to be a rare Winter migrant. It is much used in falconry, and highly prized by oriental falconers. To Indian falconers, the female is known as the 'Bāz' and the male as the 'Zurra'.

DISTRIBUTION. Breeding in the Himalayas, and wintering south to the wooded parts of India. It has been recorded at Mount Abu by H. H. the Maharaja Sahib of Bhavnagar; and His Highness' men caught an immature female bird in the Victoria Park, Bhavnagar,* on 10th December 1953. Rare in Saurashtra.

FOOD. Feeds upon birds and small mammals of various kinds during the early morning and the late evening. It is a very useful bird when trained, capturing Cranes, Geese, Bustards, Junglefowls, Herons, Patridges, Ducks, hares and other smaller Game.

SHIKRA

Gujerati Name—Shikrō ♀ Shikri ♂

Accipiter badius dussumieri TEMMINCK

See Coloured Plate 6.

SIZE. About that of the Pigeon.

IDENTIFICATION. Adult female: Upper-parts, ash-grey with a white feather here and there. Lower-parts, whitish but closely barred with reddish-brown from the upper-breast to the belly. Legs, long, slender and yellow to orange-yellow; tarsus, unfeathered, the feathers of the thighs only extending upto the

* See Journal, B. N. H. S., Vol. 52 No. 1, Page 211.

knee-joint. The ash-grey tail is longish and banded with black. The under tail-coverts are white and the wings are fairly short. The head is roundish with a short, sharp, curved black beak. The eyes are orange-red to blood-red. The adult male is smaller. In immature plumage, the upper-parts are dark brown with whitish under-parts striped or blotched with dark brown. Immature birds vary in colour on the lower-parts, some being striped with light cinnamon, others with dark brown; some are almost reddish-brown while others are dark earthy-brown below with white edges to the feathers. The eyes vary also, some being white, others ranging from yellow to yellowish-green. Sexes alike. The mesial or chin-stripe is present.

NOTES. This is a common bird, seen all over the countryside and in forests. In flight it is medium fast. It catches its prey by surprise and takes birds as they rise when they are at a disadvantage. It has a penetrating whistling call, *chich-cheev*, during the breeding season when it becomes rather noisy, especially in the vicinity of its nest. Although it likes seclusion, it is not at all shy and a close view of this bird is not hard to obtain. The pose, when seated, is erect, and the short wings allow the tail to be seen clearly. While flying, the bird quickly flaps its wings and glides in between. At mid-day, it may be seen soaring and sunning itself with the tail often spread-out. Falconers use this Hawk for capturing small birds as well as larger ones such as Plovers and Crows, and it is capable of being trained to take the Neophron Vulture.

DISTRIBUTION. The whole of India and Saurashtra. Common and resident as well as a local migrant.

NESTING. Season—February to May. The nest is not large, being smaller than that of a Crow. It is a mass of sticks with a shallow depression in the centre. Old worn out Crows' nests are sometimes used, but generally the birds make their own nests. In most cases, a tall tree is selected if available, but nests in the Mango and the 'Pipal' trees are quite common. The nest is usually placed $\frac{3}{4}$ way up in a fork of the main trunk and is from 15 to 40 feet high. The eggs, numbering two to three and sometimes four, are skim-blue and unglossed. During the breeding season the birds call frequently, thus betraying their nests. Young birds in down are white. Both sexes incubate and feed their young.

FOOD. Consists of mice, squirrels, insects, lizards and small birds. The method of hunting is by flying low along or over hedges and turning corners with speed in the hope of taking its prey by surprise. It is difficult to say whether this bird is beneficial or harmful. In Game Preserves, it is definitely harmful to young chicks but otherwise it does a lot of good by killing mice and harmful insects as well as by keeping down the ubiquitous Sparrow. Harmful to poultry farming, also.

SPARROW-HAWK

Gujerati Name—Bādshāh ♀ Bādsheen ♂

Accipiter nisus LINNAEUS

See Coloured Plate 6.

SIZE. About that of the House Crow.

IDENTIFICATION. The adult male is very much like the Shikra in size but differs considerably when seen in flight or at close quarters. The Sparrow Hawk is longer and has much more slender and delicate legs, the middle-toe being long and slender. The adult female, termed 'Bāshā' by falconers, has dark slate-grey to ash-brown upper-parts. Her lower-parts are like those of the Shikra but barred dark brown, each feather having a shaft line. In the smaller male, the lower-parts and the rufous side of the neck are brighter in colour. In both sexes the tail is banded and the legs are orange-yellow, and a conspicuous white supercilium is present. The female in immature plumage has brown upper-parts mixed with some white feathers, and the lower-parts are white and barred brown with heart-shaped markings on the breast, unlike the Shikra which has stripes. The eyes are yellow. The immature male has bright rufous lower-parts with heart-shaped spots or V-markings on the breast. The male is known as 'Basheen' by falconers. The bird differs from the Shikra in having a more delicate beak, and by the absence of a mesial or chin-stripe. It bears a closer resemblance to the 'Bāz' or Goshawk than to the Shikra. In flight, there is a difference between the Shikra and the 'Bāshā' when once properly marked. The latter has a fuller wing-beat and, while flying, keeps closer to the ground with the wing-primaries appearing more slotted than in the Shikra. Moreover, the wings appear curved downwards. It is also faster and more graceful in its getaway. In favourable conditions, the longish appearance and slate-brown upper-parts are a good pointer to its identity when in flight.

NOTES. Sparrow-Hawks are migrants to Saurashtra and have been seen as early as August and leaving as late as May. They are irregular visitors and usually found in wooded country but during Winter they are often seen in the fields, hunting along hedges. Unlike the Shikra, this species is shy and resents observation, taking up its roost in some shady tree during the day and flying away on the slightest approach. It prefers forested areas, if possible close to water. It is found inland and on the sea coast, keeping to ravines, hedges and trees. Most of its hunting is done either before dawn or just after sunrise, and again in the afternoon and late evening. It is a popular Hawk amongst falconers. According to History, this was Emperor Akbar's favourite Hawk.

DISTRIBUTION. It has a wide range in Asia, migrating south into India including Kutch, Gujarat and Saurashtra. It visits us in small numbers after

the Monsoon and during the Winter months, and is a regular migrant into most parts of Saurashtra. Two races are recognised in India, the Asiatic *nisosimilis* and the darker Indian *melanochistus* of the Himalayas.

FOOD. Small birds are its chief food. It preys much upon the migratory Common Quail, and on the sea coast I have seen it catch birds as large as the Ruff. It is often seen on the sand dunes, waiting for tired migratory birds to land on whom it preys regularly in early mornings. During the Winter season, it also hunts from about 4 p.m. to sunset. It seems to prefer hunting along hedges and ravines or shallow gullies, and takes most of its prey by surprise. I have seen it take the Rosy Pastor with ease from a fair distance. Over wooded country, it glides and then pursues its prey with rapid wing-strokes, often across or down wind. While hunting, it hugs the ground like a Goshawk.

LONG-LEGGED BUZZARD

Gujerati Name—Mōsami Tēesō

Buteo rufinus CRETZSCHMAR

See Coloured Plate 3.

SIZE. About that of the Pariah Kite.

IDENTIFICATION. A large Eagle-like bird, slightly larger than the Common Kite. Long-legged Buzzards differ considerably in pattern and colour, many being greyish or cinnamon on the upper-parts with the white feathers showing. The common colour phase has whitish to creamy head and breast, the latter being striped or splashed with bright cinnamon extending upto the upper-breast. The legs are long and unfeathered except to some extent on the tarsus in some birds. The tail is mottled, almost barred, and rufous-brown; the eyes and legs are yellow to golden-yellow. Young birds have brown eyes and their tails are much barred. In flight, the white patches on the upper sides of the wings are noticeable in many birds. Sexes alike.

NOTES. This Buzzard is commonly seen during Winter, sitting on haystacks or trees in the open and waiting for some rat or squirrel to leave its abode. It is very sluggish and may be seen sitting for hours. When the sun is well up, it flies and soars into the sky to bask and scan the ground for lizards and small animals. It often visits big towns, and I have frequently seen it perched on large buildings. I have also seen it preying upon Pigeons, and it is amazing how this slow flying Buzzard can capture them. The method of capture is by surprise, flying under the cover of some building and suddenly appearing behind a corner where the Pigeons are resting and then catching them as they rise. The flight is slow and unimpressive. These birds are not shy, allowing close

approach. In some years they are abundant while less common in others. As they differ considerably in their colour-phases, they can easily be mistaken for Upland Buzzards which are rare visitors with us. However, the immatures are difficult to separate. The Upland Buzzard is usually darker though the whole head is entirely white and streaked with dark brown on the crown and nape.

DISTRIBUTION. Breeding in Europe, Asia, and south to the Himalayas. The bird is a common migrant to most parts of India including Kutch, Gujerat and Saurashtra during the Winter months.

FOOD. It feeds on mice, rats, lizards, snakes, Pigeons, Partridges, and other small birds and mammals. I have never seen it do much damage to Game, and it appears to be a useful Hawk in its Winter quarters.

UPLAND BUZZARD

Gujerati Name—Himālaya Ṭeesō

Buteo hemilasius TEMMINCK AND SCHLEGEL

SIZE. About that of the Pariah Kite.

IDENTIFICATION. Usually a darker bird than the last species with a bluish beak and a faintly mottled and barred tail which is not rufous in colour. The white feathers on the upper-parts are noticeable as in the last species. Eyes, yellow; legs, pale yellow in immature birds; thighs, spotted and not streaked.

NOTES. This is a bolder bird than the last species, and some Buzzards that I have seen chasing and attacking hares unsuccessfully were of this species.

DISTRIBUTION. Northern and Central Asia; breeding in the Himalayas and Tibet, and wintering southwards in North-West India. Very rare in Saurashtra.

FOOD. Same as the last species. While hunting, this bird shows more courage than the Long-legged Buzzard.

DESERT BUZZARD

Gujerati Name—Rāṇa Tēesō

Buteo vulpinus GLOGER

SIZE. Slightly smaller than the Pariah Kite.

IDENTIFICATION. Recognised by its bright rufous plumage, rufous coloured tail and head, and smaller size. On the whole, it resembles the last species but is much more reddish all over.

NOTES. I have never seen or collected enough birds to comment on the habits of this species which to me seem much the same as the last two in the field.

DISTRIBUTION. Western Asia, South-East Europe, Africa, Arabia and North-West India. A rare Winter migrant in Saurashtra.

FOOD. Similar to other Buzzards.

WHITE-EYED BUZZARD-EAGLE

Gujerati Name—Tēesō

Butastur teesa FRANKLIN

See Coloured Plate 2.

SIZE. About that of the Jungle Crow.

IDENTIFICATION. A light to dark brown bird with long yellowish legs not feathered to the toes. Upper-parts, brown mixed with some white feathers; lower-parts, whitish and striped and barred, sometimes heavily, with brown mixed with ash colour; abdomen, splashed with brown. Tail, fairly long and normally of the same colour as the upper-parts but, in some cases, bright chestnut, often mixed with brownish-grey and with a subterminal black band. Forehead, whitish; crown, with a broad band in the centre. A light patch is also seen on the nape. In some birds, the white on the head appears like a cap, and a conspicuous dark brown or blackish stripe runs below the beak and along the centre of the chin. Eyes, white to pale yellow. Beak, yellow and tipped black.

Young birds have rufous-brown lower-parts, just like an immature Bonelli's Eagle, and their eyes are blackish. Some birds are very pale and are whitish on the lower-parts which are streaked faintly with black, the head being creamy-white. In breeding birds, the black wing-tips are clearly noticeable when they are flying and when seen from below. The flight is neither like a Falcon's nor like a Hawk's, though resembling both at times. The bird has a peculiar flying and gliding style. While flying, a light patch on the upper and lower side of the wing easily distinguishes it in the field. The call is a shrill *tīōōō-tīōōōō* or

ti-tiḍō, much like that of the Shikra but more prolonged and slightly harsher. The 'Teesa' or White-eyed Buzzard is not at all a shy bird and allows very close approach.

NOTES. There are light and dark phases in this species. The 'Teesa' is one of our commonest resident Birds of Prey. It is invariably seen perched on telegraph posts and roadside trees. In Winter, it sits frequently on haystacks. The pose, while resting, is very upright and has an air of great dignity. The bird habitually feeds on small prey.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common. Many birds are local migrants, coming into Saurashtra from the mainland about October.

NESTING. Season—December to May. The nest is made of sticks and usually placed on thorny trees, sometimes in evergreens. The nest is about the size of a Crow's, but not so well built. Solitary trees are preferred for nesting. I have found nests which were placed on stunted trees. The height at which they were placed did not exceed 12 feet. Many nests found were by the road. The eggs number two to three and are chalky-white, sometimes with a bluish tinge. The birds make a squealing sound when copulating.

FOOD. They feed mostly on lizards, mice, squirrels, small snakes, locusts and large insects. During the rains, worms are also eaten. The bird generally soars high up in the sky and circles while watching out for small lizards or mice to creep out and then drops on them with half closed wings. It also patiently waits on the top of a tree or post for some animal to move and then glides to where it has seen it, catching its prey on the ground or hunting for it over or around a bush or in the grass. The 'Teesa' may sit on the ground for quite a long time, watching out for its prey. I have seen it trying to flush lizards and preying upon Partridge chicks. Once I found a dead Painted Sandgrouse under its feet as it flew away.

CRESTED HAWK-EAGLE

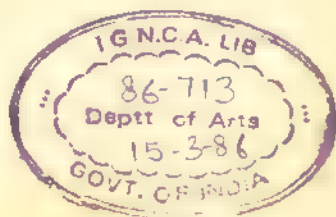
Gujerati Name—Mor Bāz

Spizaetus cirrhatus GMELIN

See Coloured Plate 2.

SIZE. Slightly larger than the Pariah Kite.

IDENTIFICATION. The head is streaked with brown, having a long tuft-like black crest, called in vernacular a 'Kalgī'. The eyes are golden-yellow, but in young birds they are brownish and the crest-feathers are tipped with white. The female is much larger and darker than the male. Beak,



black-tipped, short and hooked; legs, feathered to the toes and long; feet, yellow; claws, black and large; nostrils, round. The upper-parts vary from light to dark-brown and are mixed with some whitish feathers; the breast is rich buffy-brown streaked with dark brown, but it varies and is darker in adult birds. The vent is whitish to buff; the tail is fairly long and banded, with much space between the penultimate band and the last one. The body-pose, while sitting, is upright, and the black crest is conspicuous from a distance. When erected, it gives the bird a formidable appearance. These Eagles are found in forest country only. They perch mostly on leafless trees near open spaces. The flight is fairly fast. They are usually seen singly except in the breeding season when they may be observed hunting in pairs.

NOTES. These Hawk-Eagles prefer forest openings from which they look out for their prey. The very slender legs and body give them the appearance of a Honey Buzzard but when resting, they are much more upright. They are often mobbed by Crows. The call is a piercing, high pitched scream. Immature birds, when perched and seen from a distance, may be mistaken for Kites.

DISTRIBUTION. Forested areas of India. In Saurashtra, I have only seen the bird in the Gir Forest where it seemed fairly common and resident.

NESTING. Season—November to April. The nest is a large one with a deep cavity. It is lined with green leaves. One white egg is laid which is sometimes speckled or blotched with reddish-brown.

FOOD. Its food includes Game Birds, Waterfowl, reptiles and rodents. It is a courageous bird, not hesitating to attack a Peafowl when hard pressed for food. Its method of hunting is to remain silently perched on a tree which is usually leafless, near a waterhole or stream; and on sighting its prey, it dives or glides and, with rapid flaps of the wings, strikes its prey on the ground or in the air as it rises. The birds also hunt in pairs, dropping from the sky on to their prey. I remember watching a pair making a joint attack on a White-breasted Waterhen which had strayed from a patch of reeds.

BONELLI'S EAGLE

Gujerati Name—Sāṁsāgar

Hieraaëtus fasciatus fasciatus VIEILLOT

See Coloured Plate 5 and Plate 35.

SIZE. Slightly larger than the Pariah Kite.

IDENTIFICATION. In colour, the adult bird gives a vivid impression of a huge Lagger. But it differs considerably in shape and characteristics. Upper-parts, amber-brown with a light greyish tinge mixed with some white feathers

on the wings and a white patch on the back, not on the rump. The breast and lower-parts are off-white, the former usually streaked with brown. The beak is powerful and hooked; the legs, feathered to the toes, are long and slender. Eyes, pale golden-yellow; nostrils, elliptical and oblique. The immature plumage differs entirely from the adult one in being pure brown above; the lower-parts are brown, varying from rich to pale buff or rufous-buff; the eyes are brown and the legs are yellow with sharp black claws. The intermediate plumage, assumed in the second year, is a mixture of both adult and immature plumages. The brown of the eyes of the immature bird is retained until the third year. Immatures are reminiscent of young White-eyed Buzzards. Sexes alike but the male is slightly smaller.

NOTES. This Eagle is not as large as some of our others but it is one of the fiercest and most active of them all. It is found in hilly country, open as well as wooded, hunting far and wide into the plains. It is usually seen in pairs but single birds are also met with. It has an yelping call much like that of a dog, and also a high pitched whistle. In flight, the white under the wing and on the lower-parts helps to identify it from the dark coloured Eagles. And its longish tail and long semi-pointed wings give it a Hawk-like appearance while soaring. The wing-beats are fairly rapid. This Eagle can be trained to capture hare, fox, 'chinkara' and antelope.

DISTRIBUTION. Europe to most parts of India including Kutch, Gujerat and throughout Saurashtra. Resident and fairly common.

NESTING. Season—December to April, most birds laying in January and February. This is perhaps one of our most regular Eagles which keep to the same eyries for years together. The nests are very bulky and extremely large; one that I saw in the Gir was 6 feet wide and 8 feet high, one of the largest I have ever seen. Yearly, the parent birds rebuild on top of the nest which is thus increased to an enormous size. These Eagles nest on ledges on steep rocks as well as on trees, including palms, in hilly and flat country and wherever Game is plentiful. I have seen two eyries not very far from each other on two separate hills being used by the same pair in alternate years, depending upon their preference. If one nest was disturbed, the other would be used. Both the nests were on rocky ledges. Nests found on trees are always more bulky and larger in size. The parent birds continue to repair the eyries even after the young are hatched, for I have often seen them bring in long twigs with green leaves to be placed on the nest. The same eyries are used for more than 20 years by the same pair, and if one bird is killed, the remaining one pairs quickly with another, for I have seen old birds pairing with birds in intermediate plumage during the breeding season. If often shot at, they reluctantly leave their breeding areas. Two eggs form the usual clutch. They are much like magnified Kite's eggs with hardly any reddish splashes, most of them being white while

some are finely spotted and resembling Turkey's eggs. The birds may nest close to habitation, often in trees close to large towns, and on rocky crags overlooking such areas. The slightly smaller male seems to be more active once the young are hatched, and both parents take great care of them. Like in most Eagles with young, this Eagle also leaves surplus food on the nest.

FOOD. I have recorded the following food: Pigeons, Doves, Mynas, Partridges, Quails, Parakeets, Short-eared Owls, Peafowls, Chickens, Ducks, Coots, Cormorants, Moorhens, Egrets, Herons, hares, mongooses, field mice, gerbilles, field rats and monitor lizards. It does most of its hunting in pairs, one bird remaining high up and the other fairly low. On hillsides especially, one bird flies low, almost beating the bushes with its wings in order to flush its prey while its mate is gliding high above, and as soon as Game is flushed, both birds fall upon it one after the other. Although these Eagles rob Kites and Hawks of their prey, most of their hunting is done by themselves. A common habit is for a pair to glide along the steep hillsides, scanning the ground for Game. This is one of our most destructive and fearless Eagles but a magnificent bird to watch while hunting in pairs. There are certain rural people who, well aware of its feeding habits, start beating for hare, and when one is started and a pair of Eagles has captured it, they run up, and drive away the Eagles from their prey. I know a man who took three hares in this manner in one afternoon.

BOOTED EAGLE

Gujerati Name—Pardéshi Sāṃsāgar

Hieraaëtus pennatus GMELIN

SIZE. About that of the Pariah Kite.

IDENTIFICATION. An Eagle about the size of a Brahminy Kite. In the adult plumage, the lower-parts are almost whitish but rufescent on the breast and finely streaked with brown. Upper-parts, tawny-brown but reddish on the nape and back; a tawny-white patch on the upper tail-coverts and tawny feathers on wing-coverts and secondaries. Under-wing, whitish, as in Bonelli's Eagle. Legs, feathered to the toes; eyes, brown. In the intermediate plumage, the lower-parts are mixed with reddish-brown and white, always faintly streaked with black. An immature bird belonging to the dark phase, and, I believe, in 2nd year plumage, has brown upper-parts with blackish rump and tawny-brown wing-coverts with pale edges; secondaries, dark and faintly barred; tail, brown and rounded and very faintly barred; outer tail-feathers, flecked with white on inner-webs; nape, tawny or lighter than upper-parts but finely streaked all over. Forehead, whitish; lores, blackish; lower-parts, reddish-brown with fine dark

brown streaks. Patches of white feathers on the sides of the lower-neck not always conspicuous. The general appearance of the colour is like a Kite. The dark phase is reminiscent of the immature Marsh Harrier, and the lighter one that of the Tawny Eagle. Legs, feathered to the toes which are yellow; inner and hind claws, large; nostrils, oblique and narrow.

NOTES. When flying ordinarily, the wing-stroke is reminiscent of the Brahminy Kite. When gliding, the bird appears somewhat like a Marsh Harrier, or like a Tawny Eagle. However, the white patches on the side of the breast seen in favourable light easily distinguish it from all other Eagles. While after its prey, it flies with fast wing-beats, typically like Bonelli's Eagle. It may be seen on the waterside or anywhere else. It has a habit of flying backwards and forwards with or against the wind. A Winter migrant with us up to March-April; rarely seen when on migration.

DISTRIBUTION. Breeding in certain parts of Southern Europe, N. Africa and Asia including Northern India; migrating south of its breeding range in Winter, to most parts of India, Burma, Ceylon and the Malay Peninsula. A regular Winter migrant to Saurashtra, Kutch and Gujerat. Uncommon.

FOOD. Feeding on a great variety of species; generally seen flying close to thickets or next to water or open country.

IMPERIAL EAGLE

Gujerati Name—Shāhi Jūmmas

Aquila heliaca heliaca SUVIGNY

See Coloured Plate 2 and Plate 35.

SIZE. Much larger than the Pariah Kite.

IDENTIFICATION. In full adult plumage, this is a large dark Eagle with the upper-parts blackish-brown and the lower-parts almost the same with buff edges to the feathers. It is recognised fairly easily by the creamy-white feathers of the crown and nape; a small white patch on the shoulder is also seen in some fully adult birds. The tail is very faintly barred. The legs are yellow and feathered to the toes; the nostrils are elliptical. This is one of our largest and shyest Eagles, taking wing from a great distance. Adult birds are mostly seen on the sea coast and lakesides, and wandering inland. Immature birds vary a great deal in plumage. They are blackish-brown in colour with conspicuous striations of creamy-white on the lower-parts while the head is of a pale colour and streaked. In the intermediate phase, the plumage assumes a dark brown colour with more or less traces of creamy feathers on the crown. Sexes alike.

NOTES. The Imperial Eagle likes proximity to water and prefers large stretches of mud-flats and readily perches on telegraph posts, and solitary and dead trees. The flight is graceful and majestic: a slow wing-beat with the neck held outstretched and the hooked beak visible. It is a powerful bird but not a bold one, preying upon smaller animals and birds, and robbing other Birds of Prey like Brahminy Kites, etc., of their legitimate food. I have seen it swooping upon Ducks. In flight, it appears heavy and the wings look broad. The call is guttural, and in a little lower key than that of the Tawny Eagle.

DISTRIBUTION. Breeding in South-East Europe, Central Asia to Mongolia and portions of Northern and Western India. Not uncommon and a regular migrant in most parts of Saurashtra. I have seen it regularly on the Eastern Saurashtra coast during the cold weather.

FOOD. Feeds on a variety of food. On the coastal area, I have seen it prey upon mud-gobies, other fish, sea-snakes, lizards and Shore Birds. On the lakes, it feeds upon Water Birds and I have seen it snatch young and adult Cormorants from their nesting colonies; the Cormorants stretch themselves to their full height and emit a chorus of loud noise anticipating the attack which invariably intimidates the Eagle. If a bird or nestling is flushed, the Eagle accelerates its speed by quick wing-strokes to overtake its prey before it reaches the water. It is, however, too slow for Ducks, but it regularly takes Coots by hovering above the surface of water and then plunging into shallow water to catch them as they emerge from their dive. The whole process of hunting is fairly interesting to watch as every attempt to catch the prey is not always successful. In open grassland country, the Eagle preys upon rodents and lizards, and, as in most cases, robs other Birds of Prey of their food. It does not appear to do much harm to Game. It may be seen sitting on a solitary tree or on hill-tops, waiting for its food to appear rather than constantly soaring in the air. In hilly country, I have often seen the bird flying low over ridges and into valleys, and out again, gliding and flapping slowly across strong air-currents and suddenly accelerating the speed, like a Harrier, in an attempt to catch its prey.

STEPPE EAGLE

Gujerati Name—Pardéshi Jūmmas

Aquila nipalensis HODGSON

See Coloured Plate 2.

SIZE. Much larger than the Pariah Kite.

IDENTIFICATION. This Eagle somewhat resembles the Tawny Eagle but is much larger. The commonest type of colour phase has the upper-parts a reddish earthy-brown, the lower-parts are slightly paler, with the breast uniformly

coloured. The distinguishing characteristic is the buffy or cream coloured band it has on the wing-coverts which is seen clearly when the bird is resting. Sometimes there are two bands, and in other cases only one. These bands are usually seen in younger birds. The legs are feathered to the toes and are fairly long. Cere, bright waxy-yellow, and toes, bright yellow. The tail is faintly barred with dark brown in young birds. Eyes, brown. Nostrils, elliptical. The plumage of immature birds seems to vary, and some have dark and pale feathers on the breast, imparting almost a patchy effect. This Eagle settles on the ground much more frequently and also soars for considerably longer periods. The bright colouration of the cere and legs should be marked in the field. It has a large wing-spread and the flight is heavy but graceful. It is a little shyer than the Tawny, but less so than the Imperial. While taking off from the ground, it appears to fly with a slight effort and flies along the ground for some distance before rising. Unlike the Imperial Eagle, it prefers to keep to desert or stony arid country rather than to the waterside. Sexes alike but the female is larger.

NOTES. It is a fairly common migratory Eagle which is seen all over the countryside. It is not uncommon to see three or four birds settled not far from each other, and I have witnessed them feeding on a dead animal and fighting over morsels of food with other Eagles. As a rule, Eagles do not keep together but a pair or two may be seen either flying or perched on a tree or settled on the ground in the same neighbourhood. This species may be seen in extensive grasslands where it does not hesitate to rest on the ground, much more so than any other of our Eagles. Like all others, it is a late riser, soaring up when the sun is high in the heavens. It circles in the sky for hours, watching for its prey and diving down perpendicularly upon it with tremendous speed. Once a bird or animal is caught, it is held fast in the sharp talons and torn to bits immediately. In anger, it raises its head and puffs out its feathers like most Eagles. This is invariably seen when it has caught or missed its prey: if it has missed, it usually remains on the ground and sulks. It snatches food from other Eagles whenever it can. However, it can go without food for days together but when finally hungry, it grabs at practically anything it can get. At times it may allow close approach, at others it takes wing from a long distance. I have often seen it in company with the Tawny and Imperial Eagles, and the student should be careful in identifying the birds when a number of Eagles are seen together.

DISTRIBUTION. Asia and most parts of India, being found throughout Saurashtra during the Winter months. I have seen it more frequently in Northern Saurashtra, Dhrangadhra, Wankaner, and adjacent parts of Halar. It is known to breed in some parts of India but I have not found it nesting in Saurashtra.

FOOD. It feeds on a variety of animals such as mongooses, lizards, rodents and birds, readily robbing and destroying other Birds of Prey and showing cannibalism

at times. It prefers areas where there is plenty of Game; it drops on to hares more frequently than other Eagles with the exception of Bonelli's. The method adopted for catching its prey is by dropping like a stone from above; the sudden rush of wings stupefies hares which, owing to their habit of freezing, are caught immediately. It is a harmful bird in Small Game preserves. I once saw a pair making an attempt to catch a 'chinkara' fawn which was just saved by its parents coming to the rescue.

INDIAN TAWNY EAGLE

Gujerati Name—Déshti Jūmmas

Aquila rapax vindhiana FRANKLIN

See Frontispiece and Coloured Plate 5.

SIZE. Larger than the Pariah Kite.

IDENTIFICATION. This is our commonest Eagle. It varies in colour having dark and light phases, and also intermediate ones which usually indicate changing of plumage. The ordinary phase is a light tawny-brown below and darker above, much like a pale-coloured Kite. In the light phase, the upper-parts are pale tawny to buffy-brown with the head and neck almost completely dull white while the lower-parts are ivory-white. Cere, pale yellow; legs, pale yellow or whitish-grey; primaries, black. The dark phase has the upper-parts dark brown and the lower-parts dark earthy to khaki-brown. The intermediate phase has a dark brown patch on the breast which is conspicuous in flight and which I attribute to a change of plumage. Light rump patches are seen in most Eagles including this one; these are not diagnostic marks of the species. And yet, if white patch present, it is on the rump or back rather than on the base of the tail-feathers. In size it is smaller than the Steppe and Imperial. In most birds, the lower-parts are uniform in colour, and some birds, instead of having a patch on the breast, show darker markings on the lower-breast and abdomen. In all, the legs are feathered to the toes, the latter being yellow or greyish. The eyes are brown. This Eagle somewhat resembles the Steppe Eagle but is less powerful and lacks the conspicuous buffy-cream band on the wings. The male bird is decidedly smaller than the female. The call is a guttural *ghā-ghā* or *ghain*. Young birds emit a scream like a young chicken. Sexes alike.

NOTES. This species lives much closer to habitation and allows close approach. I have seen it in towns, alighting on houses or nearby trees. It is, therefore, more destructive to domestic fowls than any other Eagle as it hardly has any fear of Man. In the countryside, it is seen in all types of habitats, and is found in desert and scrub jungle. The flight is a slow wing-beat typical

of most Eagles. While soaring, it can be distinguished from the Kite by its larger size and rounded tail. From Vultures soaring high, it differs in the wings being kept slightly bent and the tail being proportionately a little longer. As this Eagle is fairly tame, it does not generally fly from its perch, which is usually a thorny tree or telegraph post, when a car passes by it. It feeds upon anything that it finds dead or alive but nothing much larger than a hare. I have occasionally seen it pick up wounded birds and carry away dead ones during shoots. On the whole, it is a cowardly bird; nevertheless, the bravest action I ever saw was when a pair attacked a wounded Eastern Common Crane in the air and managed to bring it down. Like all Eagles, these birds soar high up and dive down upon their prey. They readily feed on dead animals just before Vultures start their feast. In early mornings, I have often seen them perched on large solitary trees, even on the roadside. To falconers, all Eagles are a constant pest as they interfere with their trained Hawks, killing them if they can or chasing them away, and no exception is made for this species.

DISTRIBUTION. The whole of India and throughout Saurashtra. Resident and local migrant.

NESTING. Season—October to April, most birds laying from November to March. The courtship of this bird is most amusing to watch. The male begins to display in the air. Suddenly some guttural calls are heard and looking up in the direction whence they come, one sees an Eagle in the sky diving with closed wings and then suddenly spreading them out and rising up to the highest point in its momentum, then diving again and, at times, looping the loop. In this way it descends to a lower height, after which it quickly flaps its wings, and uttering its grunts, swings up into the air to make a semi-loop. This performance is repeated again and again. The female is normally above the male, admiring the performance, or at some distance away but always in view. This courtship is reminiscent of that of the Ashy-crowned Finch Lark. I have seen two males displaying in this manner to a female. After mating, the birds seek a tree in the close vicinity on which a nest of sticks is made; both parents build the nest and help to bring up the young. The young takes about 75 days to leave the nest. When they are in down, Eaglets often fight and the larger one usually kills the smaller one. Solitary trees are preferred, and 'Babul' trees are the most commonly utilised. The tree selected may not be tall. During the breeding season, Tawny Eagles may capture larger animals than they are wont to do, such as mongoose, fox and hare, to feed the young. At that time, they may be seen hunting in pairs. I have seen them nesting on the same trees year after year, but many of the trees selected are destroyed and the branches broken by shepherds who often destroy the eggs and the young. One to two eggs are laid. They are white ovals, sometimes marked with reddish splashes. Where the birds are left in peace or where the trees on which their eyries are placed

have not been lopped, they continue nesting on the same tree for years; but it is not often that we see this these days. After the breeding season is over, Eagles leave the breeding area and are very seldom seen until early October when they commence pairing. Nevertheless, it is this species which is sometimes seen in the hot months of May and June and not the Steppe or the Imperial.

FOOD. The Tawny Eagle feeds on rodents, other mammals, birds, lizards, insects and snakes. It also eats carrion. It is always ready to deprive Hawks, Kites, and smaller Eagles of their prey. The method of hunting is generally by flying or soaring at great heights and, then when the quarry is seen, diving upon it with half closed wings. Another method is by making surprise attacks into large trees and over hedges. A pair may often be seen diving one after the other, and other Eagles in view may join in the chase; the successful Eagle immediately tries to gobble the food if small enough or attempts to escape by flying, but this usually proves a failure as the other Eagles soon catch up and a scrap ensues with all the Eagles trying to snatch a morsel for themselves. The prey is then torn to bits, each Eagle getting a small portion to satisfy its empty stomach. It seems an irresistible temptation for Eagles to chase and snatch away the food when they see another Bird of Prey eat it at leisure. This might also apply to Desert Falcons. Larger Birds of Prey will invariably do their utmost to rob smaller ones of their well-earned food. The Tawny Eagle preys largely upon the common striped squirrel, and I once saw three Eagles drop upon one that had left its tree to reach for another. Eagles will constantly wait for such opportunities, and it often seems surprising that such large birds will stoop to catch such small fry. I once witnessed a Tawny Eagle eating the eggs of a Red-wattled Lapwing. Also, I have seen one killing Crows and rats. This bird does not appear as harmful as one believes, for out of the many stomachs dissected by me very few contained Game Birds. This would probably amaze those people who have killed it traditionally. There is no doubt that Eagles prey upon Game if it is abundant, and a check on the birds is necessary if Game Preservation is to be carried out.

GREATER SPOTTED EAGLE

Gujerati Name—Tapkivāḷō Jūmmas

Aquila clanga PALLAS

SIZE. Larger than the Pariah Kite. Length over 25".

IDENTIFICATION. A fairly large, uniform chocolate-brown Eagle, sometimes mottled with white on the upper-parts including a patch on the upper tail-coverts. Tarsus, feathered to the toes; feet, pale yellow or whitish;

nostrils, round; eyes, dark brown; cere, yellow. This Eagle prefers well-watered areas and flat ground. In flight, the wings and primaries appear more rounded and curved downwards than in most of our Eagles and the wing-stroke is much more Hawk-like. Primaries, black. Young birds are invariably spotted with buffy-white on the wing-coverts, inner secondaries and upper tail-coverts, but these are generally uniform in fully adult birds. While flying and seen from below, the lower-parts in some birds appear much spotted or mixed with dark brown and tawny. The birds soar much of the time and have a habit of opening and closing their wings frequently while doing so. Sexes alike but the female is larger.

NOTES. On the whole, this is a fairly shy Eagle which takes alarm from a fair distance. At times it is rather noisy, emitting squeals and yells. It perches mostly on solitary trees, sometimes in jungle close to water. It is not frequently met with except during Winter when single birds may be seen everywhere in the countryside; yet it prefers to be in the vicinity of large expanses of water. The general impression of this bird is that of a huge dark-coloured Eagle. When settled it appears much plumper than other Eagles.

DISTRIBUTION. It has a wide distribution, being found in Europe and Asia to China, and practically all over India. It is uncommon in Saurashtra. It seems to breed only in certain well-watered localities. Resident and locally migratory.

NESTING. Season—February to May. I have found it breeding on the outskirts of Bhavnagar near the Bhal area, next to perennial rivers. The nest is a small platform made of sticks, usually placed on a solitary tree, and it is often mixed with castings. One white oval egg is laid. Isolated trees in flat open country are favourite sites, but occasionally it nests in scrub jungle, also. On the whole, it is rare and few nests are found. The parent bird sits fairly close until the nest is approached, but leaves it from a long distance if approached again, sometimes even deserting the nest.

FOOD. Its food consists of frogs, snakes, lizards, rodents, Waterfowl and other birds. I have taken remains of Rollers, fish and frogs from and under its nest. Small mammals are also taken. This Eagle is not as fierce as it is believed to be. With us, it preys largely upon aquatic creatures.

LESSER SPOTTED EAGLE

Gujerati Name—Nānō Tapkivāḷō Jūmmas

Aquila pomarina hastata LESSON

SIZE. About that of the Pariah Kite. Length not over 24".

IDENTIFICATION. Similar to the Greater Spotted Eagle but smaller; the upper tail-coverts in adult and young birds generally lack the white patch. Young birds have a rufous patch on the nape and are lighter coloured than in the last species. The wing is less than 570 mm. in females, and 470-505 mm. in males. Young birds are spotted white and rufous with dark shaft lines. Sexes alike.

NOTES. This Eagle is definitely more harmful than its larger brethren, preying upon small game and harmless birds. At a distance, it may sometimes be mistaken for a Kite but while flying, the rounded tail and wings readily identify it. In habits, it is definitely more of a woodland bird than the last species. It is separated from the Booted Eagle by its compact shape and more rounded wings and relatively shorter tail. It is rather a noisy bird. I have shot it while it was attacking small birds. It is, on the whole, rather rare, some birds coming during the cold season.

DISTRIBUTION. Same as in the previous one but less common outside India; rare in Saurashtra.

NESTING. I have not found eggs of this Eagle in Saurashtra.

FOOD. Mynas, Partridges, the young of birds and leverets. Harmful to Game.

WHITE-BELLIED SEA EAGLE

Gujerati Name—Dārīāi Garūḍ

Haliaeetus leucogaster GMELIN

SIZE. About that of the Vulture.

IDENTIFICATION. Whole head and breast, white; wings and upper-parts, dark ash-brown. The black tail is comparatively short and is tipped with white. Eyes, brown; legs, yellowish-white. This is a magnificent Eagle with a tremendous wing-span. It is the largest seen on our coast. The wing-beats are slow and graceful. It seldom goes inland and is extremely rare with us.

NOTES. I have recorded it at Talaja at the mouth of the Shatrunji River.

DISTRIBUTION. Indian coastline to Burma, Malaya and Indo-China. Very rare in Saurashtra.

FOOD. Mostly fish.

PALLAS' FISHING EAGLE

Gujerati Name—Pallas-nō Machhimār Garūd

Haliaeetus leucoryphus PALLAS

See Coloured Plate 2.

SIZE. Considerably larger and heavier than the Pariah Kite.

IDENTIFICATION. A large dark brown Eagle with a big hooked beak. It is at once recognised by a broad white band on the tail; in flight, the basal black half of the tail is not always visible so that it gives one the impression that the tail is mostly white with a terminal black band. Head and neck, tawny-white, the feathers being lanceolate which is a diagnostic feature. The legs are whitish to fleshy-white and not feathered to the toes; the tarsus is only feathered on the upper one-third. The eyes are brown to greenish-yellow. The conspicuously hooked greyish beak gives it an impressive demeanour. Many birds in intermediate plumage have reddish-brown lower-parts, resembling the Brahminy Kite. Young birds are uniform brown, practically all over. And yet I have seen immature birds which had buffy to pale brown upper-parts, lighter lower-parts and a conspicuous white patch on the under-side of the wing which could be seen in flight. This Eagle is seen on freshwater lakes and rivers, and rarely on the sea coast.

NOTES. It is not a very shy Eagle; yet it will not usually permit near approach though it may be seen passing at close quarters while hunting. It is often seen perched on trees near or in water, and occupies any small islet in lakes or large rivers. The best season to see these local migrants is March and April. At this time, they may often be heard calling to each other vociferously, and a pair may be seen sitting close together on some lonely islet. The call is a loud and distinct yelp which can be heard at a great distance.

DISTRIBUTION. Found from Asia Minor and Persia to most parts of India, and visiting well-watered areas of Saurashtra. Uncommon but regular migrant. Breeding in some parts of India. The bird is generally seen from October to December, and then again from February to April.

FOOD. This Eagle feeds chiefly on freshwater fish and Waterfowl. I have seen it plunge into water with force for fish and manage to bring out a large one. I have, however, not seen it submerge completely like the Osprey, but

it makes a big splash. On the lakes, it feeds upon various Waterfowl. It hunts by soaring very high up and then diving down, sometimes swinging from side to side in the air before finally swooping upon Wildfowl; and in the event of a miss it may often attempt to pursue its prey with accelerated wing-beats but in vain. When in pursuit, the shape of the wings gives it a bow-like appearance. Ducks are not often caught except by an accurate swoop. This Eagle constantly menaces Waterfowl, and even succeeds in taking wounded Ducks. Although extremely powerful, it does not, on the whole, appear to be a very courageous bird. Unlike the Osprey, it seldom leaves the large stretches of water. Young birds seem to hunt closer to water and pursue their prey with quick wing-strokes in Harrier fashion.

GREY-HEADED FISHING EAGLE

Gujerati Name—Rākhoḍisīr Machhimār Garūd

Ichthyophaga ichthyaetus HORSFIELD

SIZE. Considerably larger and heavier than the Pariah Kite.

IDENTIFICATION. A large Eagle with a grey-brown head and neck. Upper-parts, brown; lower-parts, lighter. Tail, white with a subterminal blackish-brown band which is tipped white. Legs, whitish and unfeathered; eyes, yellow, but brown in immature birds. Distinguished from the last species by its conspicuous white thighs and under tail-coverts. Young birds are uniform brown with the sides of the head and throat grey, and the tail and body mixed with white feathers. In the hand, this Eagle is distinguished by the claws which are not grooved as in the last species.

NOTES. This species is very rare and may occasionally be seen on large lakes and rivers. The rounded wings are noticeable when in flight.

DISTRIBUTION. Well-wooded forest-cum-water areas of India. Rare in Saurashtra as a migrant.

FOOD. Fish and Waterfowl.

BLACK OR KING VULTURE

Gujerati Name—Rāj Gidh

Torgos calvus SCOPOLI

See Coloured Plate 3.

SIZE. About that of the Peacock minus the train but with longer wings.

IDENTIFICATION. General appearance, black and white with red head and legs. The deep pinkish-red head and neck are featherless. From a distance the head appears triangular in shape. On the side of the head are fleshy red wattles, one on each side. The black beak is curved and strong. Eyes, reddish-pink, appearing white in sunlight. A large black and white patch on the breast; lower-parts, reminiscent of a white waistcoat and shirt as of a man in dinner jacket; seen from behind, the bird appears as if in a tail coat, sometimes having a light belt across. It is recognised in the air, when viewed from the sides or below, by its blacker colouration and white patches on the flanks. The outer flight-feathers are splayed out as in all Vultures to keep the bird from stalling. Younger birds have the white patch on the underside only faintly marked, the wings a pale-brown, and the naked head and neck a paler fleshy-pink. Black Vultures do not associate in large numbers as do other species. Sexes alike.

NOTES. This Vulture is usually seen singly or in pairs. Like all Vultures, it has a keen eye-sight, being able to spot carcasses from high altitudes. The birds are slightly shyer than the commoner Vultures. During the breeding season, they display in aerial manoeuvres, the male diving on to the female and the female turning and pulling up closely followed by the male. This action is repeated many times until the birds are quite low to the ground; then with vigorous flapping they climb up again and repeat the courtship flight. I have seen them copulating in the air. As this bird is heavy and the wings proportionately long as with most Vultures, it has to run along the ground for some distance before it can take off, and if it has had a heavy feed, a still longer run is required. At night, it roosts on trees. At sunrise or soon after, and sometimes much later, depending upon how much it has eaten the day before, it soars into the air. At mid-day when warm currents tend to rise, it leaves its perch and, with heavy flapping and gliding, tries to gain sufficient height to catch the air-currents. This it does by flying in circles until it is high up to soar without the aid of wing-beats. It soars in circles with ease, moving mostly down-wind. Before it can alight, it has to flap its wings and extend the legs to break the speed and avoid a crash. Actually, its landing on the ground is not smooth and it alights with a thud. This Vulture is faster and more graceful on the wing than the commoner species. Its wings are more pointed, giving it an appearance of being well-cut. Also it is comparatively less dirty than other Vultures. It is known to feed only on dead animals. However, I

know of one unusual incident which indicates to the contrary. One morning in February, 1946, I was watching some birds on the sea-shore when suddenly a Peregrine Falcon swooped on a Wader and, after a sustained flight, managed to catch it. No sooner had the Wader been caught than a Brahminy Kite appeared, compelling the Peregrine to release its prey. The wounded bird then fluttered on to the muddy shore. In a moment, a King Vulture swooped out of the skies, caught the bird and immediately tore it open. I had a .22 rifle at the time and by firing it drew the King Vulture off its undeserved prey. The ill-fated bird was a Greenshank. This was an amazing experience, and the only one of its kind that I know of when a Vulture has attempted to catch a live bird. I have seen much shooting and have come across many instances when Vultures of this species could have had ample opportunities to pick up dead or wounded birds but in each case no attempt was made. The only reason I can give for the above occurrence is that the breeding season was in progress and owing to lack of food for the young, the Vulture, seeing an easy prey unable to escape, was tempted to kill it. Or intense hunger may have been the cause of this strange behaviour.

DISTRIBUTION. Most parts of India, including Gujerat and Kutch and the whole of Saurashtra. Resident. Fairly Common.

NESTING. Season—December to May, most birds breeding from February to April. The nest is made of large sticks and twigs which they carry in the feet, and a huge platform nest is made on a tree. Most nests are built on 'Babul' trees, but any strong thorny tree may be used. The nest is always on the top and those built on low trees form almost a roof. Solitary trees are always preferred as a rule, but when nesting in jungle, those in small open spaces are selected. The birds nest in trees on flat ground as well as on hillsides, preferring the ridges. They do not nest in colonies. One large and thick-shelled white egg is laid. Old nests are often used and repaired.

FOOD. Mainly dead animals. Like all Vultures, the bird has a keen eye-sight. It feeds mostly on decomposed animals which are easier to break open, especially in the case of large cattle. It readily associates with other Vultures while feeding, and at this time six to eight birds, and occasionally more, may be seen gathered together forming a large group. The King Vulture prefers to take first place at the feast and shows his resentment if not allowed to do so. The birds often wait for days until a sick animal dies. I have seen them swallow large bones and pieces of coarse hide. They are less noisy while feeding than the other species of Vultures except the Neophron.

CINEREOUS VULTURE

Gujerati Name—Dākū

Aegypius monachus LINNAEUS

SIZE. Larger than the Peacock minus the train but with longer wings.

IDENTIFICATION. This Vulture is identified in the field by its much larger size than any of our common Vultures and by a tuft of feathers on the back of the longish head. The neck is feathered. It has a strong massive beak and the nostrils are round in shape. There is a blackish-brown patch near the nape and around the eyes—a sort of mask. Eyes, brown. A prominent ruff at the base of the neck; the whole of upper-parts, blackish-brown. Thighs, blackish, but under-parts varying in colour from blackish to reddish-brown. Sexes alike.

NOTES. Conspicuous in flight by its large size. It has a tremendous wing-spread and a graceful wing-stroke, being less cumbersome than most Vultures. I have occasionally seen it in open country and in hilly areas. Some birds have the upper and lower parts uniform blackish-brown; the side of the neck is bluish. The dark mask and the whitish legs are seen in flight. This Vulture is a rare migrant with us.

DISTRIBUTION. Europe, North Africa, Central Asia and southwards to Northern India as a Winter migrant; rare in Saurashtra. I have recorded this Vulture at Bhavnagar and Dhrangadhra, and on the Girnar.

FOOD. Same as all Vultures. I have seen all other Vultures give way to this species while scrumming for food.

FULVOUS OR GRIFFON VULTURE

Gujerati Name—Badāmi or Pahāḍi Gidh

Gyps fulvus HABLIZL

See Coloured Plate 3.

SIZE. Larger than the Peacock minus the train but with longer wings.

IDENTIFICATION. Head and neck, bare with scanty white hairlike downy feathers and a muffler of fulvous or ivory coloured feathers; upper-parts, cinnamon. Breast, fawn with the feathers of the lower-parts streaked white. From a distance, the eyes, appear black but are really brown. The beak is greenish-cream, strong and curved at the end. The legs are grey to greenish-straw. Sexes alike. In flight and when seen from below, the lighter colour of

the body merges with that of the wings except the primaries as in the next species. Immature birds are more uniform brown on the lower-parts; also, their wing-coverts are more uniform brown than those of the immature White-backed Vultures.

NOTES. These Vultures are powerful birds, remaining in the sky most of the time until a dead animal is sighted. During the cold months, they do not leave their roosts until the sun is well up. They are not common but can be seen amongst other species while feeding, or soaring in small numbers. Although seen in flat open country, their home is up on the mountains. They may be seen flying or sitting on almost vertical slabs or ledges of grey rock or in rocky cavities. Being heavy birds, they have to do a considerable amount of flapping while taking off or alighting. While landing, the birds are seen with outstretched necks and legs and the wings flapping so as to break their speed. They make full use of rising air-currents and gain tremendous heights without flapping, slowly rising in circles and soaring high into the sky.

DISTRIBUTION. North West to Central India as also Kutch and Gujerat. Found in two sub-species: one migrant and the other resident or local migrant. Uncommon in Saurashtra.

NESTING. Season—November to April. The birds are known to nest in small colonies, but single nests are also found. They invariably build on cliffs.

FOOD. Dead animals. Like all Vultures, they do away with a lot of useless decomposing matter and are Nature's municipal workers.

LONG-BILLED VULTURE

Gujerati Name—Bhūkhro Gidh

Gyps indicus SCOPOLI

See Coloured Plate 3.

SIZE. About that of the Peacock minus the train.

IDENTIFICATION. The Long-billed Vulture can easily be confused with the Griffon but it differs in having isabeline or sandy-buff to creamy-buff upper-parts, almost naked black neck and rufous ruff; some have creamy under-parts and are slightly smaller in size. Dark birds with buffy streaks below and above generally indicate young or immature birds and are quite different from the adults. They may have some white feathers below or above on the wings or the rump. Another key to the identification of the birds in adult plumage is that there is no white patch on the back; this characteristic is noticeable

when the birds are flying. Again, they vary in colour from dark earthy-brown to almost greyish-buff. Sexes alike.

NOTES. While on the wing, the lighter coloured under-parts of the body merge with the lighter portion of the wing when seen from below, and this characteristic easily distinguishes the bird from the White-backed Vulture when soaring high. It is the Long-billed Vulture which is mostly met with in Saurashtra, the Griffon being rarer.

DISTRIBUTION. Season—November to April. I have seen it breeding on the Girnar Mountain, the Shatrunjaya Hill, the Barda Hills and other lower ranges. The cavities and large holes on the very steep rocky slabs and cliffs are all utilised by different kinds of Vultures. The nest is made of all kinds of material: rags, wool, skin, bones, etc. Large sticks are also used. The whitewash-like excreta on the edges and below the nest cavities are clearly seen from a great distance. One white egg is laid which is quickly soiled with rusty markings. On the Girnar, the nests are inaccessible except to very good climbers or with the aid of ropes. Young birds emit a constant chattering which can be heard from a distance, viz., *ké-ké-ké-ké*, repeated quickly. The fledglings are light buffy-grey on the upper-parts.

FOOD. Dead animals and decomposed animal matter.

COMMON OR WHITE-BACKED VULTURE

Gujerati Name—Gidh

Gyps benghalensis GMELIN

See Coloured Plate 3.

SIZE. About that of the Peacock minus the train but with longer wings.

IDENTIFICATION. This is our commonest Vulture. The head and neck are bare with whitish hair-like feathers. It has a fluffy white collar at the base of the neck. Upper-parts, dark-brown to almost black. Rump and back, white. Wing-quills, black. Beak and legs, slate-grey to blackish. The tail is short. Younger birds are not black above and lack the white rump patch; they have earthy-brown lower-parts streaked with white, and the ruff more fulvous. While flying and when seen from below, this bird is distinguished from other Vultures by having a part of the underside of the wing white, and by the fact that the dark body does not merge with the white of the wings. Young birds vary in colour from brown to blackish, and are hard to separate from the immature Long-billed Vultures. Sexes alike.

NOTES. This Vulture is seen everywhere and in large numbers in areas where cattle are dying. The numerous 'Panjrapols' attract the Vultures in hundreds, and there is a great number of regular customers waiting for the maimed and infirm cattle to die. They roost on large trees in colonies, returning to their roosts at sunset. But they do not roost in any one place, much depending on where they have been feeding. Roofs of houses and trees sufficiently strong to bear their weight, or bare hill tops, are among the various roosting sites. Mid-day is the time to see them up in the sky, circling at various heights in search of dead animals. They also soar to bask in the hot sun, destroying in this way many of the harmful germs and microbes that get attached to the birds while feeding on decomposed matter. They are exceptionally good at spotting objects at great distances. This is best observed when a Vulture spies a carcass from afar. It descends by gliding with outstretched legs and half closed wings and, when it reaches a point above its target, circles and drops vertically on the ground close to it. Other Vultures in the vicinity, on seeing one of their kind gliding downwards, follow in its direction one by one until the sky is full of them and then, with a tremendous rush and whirr of wings, hungry birds drop with half closed wings, legs dangling and necks hanging, and land with a thud. One by one, they appear from almost nowhere until hundreds have gathered, some landing, others circling in hesitation. They permit a close approach, but it is repellent to go very near the birds as the decomposing matter and they themselves smell terribly and a foul stench pervades downwind of their feeding ground. We may sometimes approach to within a few yards of the feeding birds without disturbing them. I have often witnessed jackals driving away the Vultures from a carcass but not for very long, being completely ignored. After heavy rains, I have often seen these birds basking on the ground with out-stretched wings.

DISTRIBUTION. The whole of India and Saurashtra. Common and resident.

NESTING. Season—October to March. The cold months are when most birds breed. They nest in colonies and it is not rare to find more than one nest on a large tree; the 'Ficus' is the most common species utilised. The nests are placed in forks of thick branches. Their number depends upon the suitability of the site and the size of the tree. Old nests are used for years, being repaired annually. The trees selected are large, and one nest I saw at Halvad was so near to the old Darbargadh Fort that I could peer into it from the window. Unlike those of other Vultures, the nest has quite a deep cavity. It is made of sticks, rags and wool, and covered with a very dirty mass of whitewash-like excreta. Leaves are often used as lining along with hair and wool. One to two white eggs are laid which soon become soiled. In fact, the feathers of the birds get soiled and splashed with excreta. While incubating in the nest,

the parent bird is visible with its head and neck out and its tail showing. However, on being watched, it presses its head and body down, trying to make itself invisible. Although most birds nest on trees, many nests are found in cavities or large holes on rocky crags. I have seen them in large numbers on the Girnar Mountain, the Shatrunjaya, the Sihor Hills, the Barda Hills, and other ranges. I have also observed them breeding on trees on hillsides in jungle areas. On the Girnar, the nests are extremely difficult to reach, but elsewhere those on trees are easily attainable. Trees which they nest on regularly are gradually killed by their obnoxious excreta.

FOOD. Dead animals. Also, fish from dried lakes. The Vultures tear open the flesh with their sharp strong beaks, commencing from the soft parts near the tail. It is surprising how they will finish off a carcass as large as a buffalo within a quarter of an hour, leaving only the larger bones and the skull. An assembly of feeding Vultures generally consists of a number of species, and I have observed almost all of them close to a carcass. The Vultures fight and squabble much over their food, shifting from place to place, kicking with their feet and flapping their wings to drive away others, making an awful noise and hissing at each other. They walk awkwardly and hop with parted wings. I have seen them ignore jackals and pariah dogs in spite of their barking and rushing towards them; some timid birds give way but the majority are unperturbed. It is only the lion and the tiger that can successfully guard their 'kill' from Vultures, and that only by constantly watching and rushing on to them. Panthers hide their 'kills' and are, therefore, seldom pestered by Vultures. Shikaries are able to locate lions on the 'kill' by watching Vultures circling low above or perching on nearby trees, waiting for the King of Beasts to leave the remains. Vultures will eat everything, from skin to bone. They gorge themselves on this food until they can hardly fly, and then lie down, reluctant to move after a heavy meal. Although they are not used to feeding after dark, I have witnessed them doing so after sunset on lion's 'kills' when they were sure the lion would not return and knew they were safe from attack. However, an occasional Vulture is killed and left by a lion while protecting his 'kill'. Vultures are a great help where insanitary conditions exist. It is interesting to note that no predatory animal or bird will eat them when dead, not even their own kind.

NEOPHRON OR WHITE SCAVENGER VULTURE

Gujerati Name—Khérō or Saféd Gidh

Neophron percnopterus ginginianus LATHAM

See Coloured Plate 3.

SIZE. That of the Pariah Kite.

IDENTIFICATION. A white bird with black wing-quills. Face and beak, orange or yellow; the latter is long and slender, and hooked at the end. The legs are short and dirty yellow. The head is bare on the crown, the feathers commencing at the nape. Immature plumage, earthy-brown and much like that of a Kite. There are more feathers on the head than in the adult. The face is yellowish-white. The bird in immature plumage may deceive a new student into thinking that it is of another species. The birds in their second year, instead of assuming their full adult plumage, become half white and half brown, mixed with black on the body and producing a pied appearance. These birds are usually seen in pairs and have all the habits of a Vulture. In flight, they are much like any other Vulture, but the wings are more pointed. The tail is wedged. Sexes alike.

NOTES. These birds are less cumbersome than the larger Vultures, rising quicker into the air and gliding easily at lower heights, but I doubt whether they reach such altitudes as the larger species. They prefer rocky crags and are quite at home in small valleys, even in jungle areas. They are found everywhere in the plains and in the driest country. This bird appears to be intermediate between the Kite and the Common Vulture. I have seen it at panthers' 'kills' though its favourite places are rubbish heaps and sewage areas. It is a typical scavenger, eating all kinds of filth.

DISTRIBUTION. From Persia to India and the whole of Saurashtra. Resident and common. The Large Scavenger Vulture (*Neophron percnopterus percnopterus*) is distinguished from the commoner species by its beak being horny and tipped black, and by its larger size. It is a migrant.

NESTING. Season—October to July, most birds laying from February to May and some as early as December. The nest site varies from a tree to a ledge or hole on a steep rocky cliff. One nest I found was on a roof of a castle. In hilly areas, it is uncommon for the birds to nest on trees. The nest is large and bulky, and is made of rags, wool, sticks and other odd material. They even bring bones, and I once found an old horse-shoe in a nest. I wonder if that brought any luck to the occupants! Two eggs make a clutch. They have a dirty white ground and are splashed with rusty reddish-brown; some are more boldly marked than others, many being of a uniform rusty reddish-brown colour very much resembling those of the Laggar, while others are almost

white like those of the Kite. Although tall trees are preferred for nesting sites, some nests I found were as low as 12 feet on solitary trees in the vicinity of towns. I have never found them nesting in colony. The courtship display is much like that of the Black Vulture.

FOOD. Dead animals. They eat mostly bones and skins and other offal from the rubbish heaps. Among Vultures, they always get the last share of the meal.

PALE HARRIER

Gujerati Name—Pattāi

Circus macrourus S. GMELIN

See Coloured Plate 4.

SIZE. Somewhat less than the Pariah Kite, and much more lightly built.

IDENTIFICATION. Adult male: A longish pale grey Hawk with black wing-quills and a long grey tail. It has long, slender legs which are not seen in flight, the unfeathered tarsus being yellowish. Eyes, golden-yellow to orange-yellow in males, and brown in females and young birds. In flight, the bird is recognised by the conspicuous white patch on the upper tail-coverts, not always an invariable character, and by the whitish breast which is sometimes greyish. The absence of the black bar on the secondaries distinguishes it from the male Montagu's Harrier. Rest of lower-parts, pale white. The rufous-brown young birds have the feathers of the upper-parts edged pale. The adult female is quite different in colour, being a rich brown with streaks of black on the head and breast; her lower-parts are khaki to reddish-brown. Both sexes have a pale nuchal collar. The head is roundish and Hawk-like, the beak being small and curved. In flight, the wings appear long and slender, and the grey and white, or brownish-grey, barring on the tail in both sexes may clearly be seen when it is spread-out. The 5th primary is shorter than the 2nd, whereas in the Hen-Harrier it is longer or equal, and differs from that of the Montagu's Harrier in having the primary emarginations near the base covered by primary coverts. This Harrier is found in open country and is seen plentifully after the Monsoon.

NOTES. It usually flies low and has a slow wing-beat but while migrating, many birds fly quite high accelerating their strokes. The return migration is seen in February, March and April, some birds lingering until May. Newly arrived birds are seen roosting on the ground in scattered groups in open uncultivated land such as aerodromes, salty ground, mud-flats and semi-desert country. It is interesting to note how they congregate at one place to roost. I have seen them using the same open spaces year after year. When they arrive, they seem to be a little shy but later on, during the cold season, they allow

fairly close approach. They always prefer settling on the ground rather than alighting on a tree. Harriers may be seen coming in waves, one by one, or two at a time, and passing over fields, gliding or flapping occasionally with the wings kept at a wide V-shaped angle. One sees them momentarily flapping their wings, hovering low on sighting some bird or rodent in a field of Bājri or Jōwār and, after a few seconds' pause, dropping suddenly into the crops to catch their prey. During Winter I have often seen them hovering low and beating their wings over a bush to flush a lizard or to make a Quail or Partridge move and thus betray itself. Some times much bluffing takes place before the bird suddenly drops on to its prey. The long tail, when spread-out, acts as a good brake, and the long pointed wings, when held high above the body, aid in stopping and turning suddenly. The birds are seen sailing over fields or hedges and along the seashore, sometimes close to the ground; otherwise, a little higher up. However, they are capable of soaring, and on migration they beat their wings fairly fast to gain height and distance. Influxes of these birds are seen from time to time after the Monsoon and during the Winter months.

DISTRIBUTION. Throughout India and Saurashtra. Common migrant, arriving in August-September and remaining up to the end of the cold season and disappearing in April or May. The majority of birds are seen during October and November, in conjunction with the migration of the Common Quail. Breeding in Europe, N. Africa and Central Asia.

FOOD. It consists of Partridges, Quails, Pipits, Larks, other small birds, field mice, locusts, lizards and snakes; but Quails, field mice and locusts are its chief prey. The method of hunting is by surprise, flying slowly over fields and then dropping on the prey suddenly. The bird also pursues its prey with quick wing-beats but only for a short distance, reminiscent of Pallas' Fishing Eagle. It often tries to flush lizards and mice from underneath bushes by hovering low over them. It seems a useful bird during the season.

MONTAGU'S HARRIER

Gujerati Name—Paṭṭi-Paṭṭāi

Circus pygargus LINNAEUS

See Coloured Plate 4.

SIZE. Same as the last.

IDENTIFICATION. This bird can easily be confused with the last species to which it bears much resemblance. The upper-parts in the adult male are dark grey while the lower-parts are striped buffy to rufous-brown on the flanks. The thighs are spotted. In hand, it is distinguished from the last species by the

absence of a notch on the outer-web of the fifth primary and by the tarsus which is under 65 mm. The female is difficult to distinguish in the field from the female Pale Harrier, but her under-parts are buff streaked with rufous. In both species, the female has brown eyes. The male may be seen in a dark phase and, then, he often appears dark grey. Other reliable distinguishing characteristics are a black band on the secondaries of the wings, and the absence of a white patch on the upper tail-coverts. Young birds of the year are unstreaked on the lower-parts. In the wing-formula, the sixth primary is shorter than the first which is not the case with the Pale Harrier.

NOTES. In habits, it resembles the last species, and may be seen buoyantly skimming over fields and grasslands in search of food. It swerves in the air, as if unbalanced, while quartering a particular patch or area in search of food. This characteristic is seen in all Harriers. Birds in juvenile plumage are most difficult to identify, however. In the immatures of this as well as the last species, the pale edges to the feathers of the upper-parts are noticeable.

DISTRIBUTION. Europe, Northern Africa and Western Asia. Wintering southwards to most parts of India and Eastern Asia. Common throughout Saurashtra, Kutch and Gujerat.

FOOD. Same as the last species.

HEN-HARRIER

Gujerati Name—Vilāyati Paṭṭāi

Circus cyaneus cyaneus LINNAEUS

SIZE. Same as the last.

IDENTIFICATION. In the field, it is practically impossible to distinguish this bird from the last two species, but in hand, it differs in having a notch on the outer-web of the fifth primary. It has no dark bar on the secondaries as in the Montagu's Harrier, but has a pure white rump as well as white upper tail-coverts which form a conspicuous patch. The lower-breast is purer grey. Females are hard to distinguish in the field from those of the Pale Harrier and the Montagu's Harrier. In the wing-formula, the fourth primary is equal or longer than the third, and the fifth equal or longer than the second. Young birds three years old are distinguished from those of the last two species by their streaked under-parts.

NOTES. This species is less common than the last two above-mentioned ones. In habits, it is the same. The student should note the rump and the upper

tail-coverts. A large white patch above the tail may indicate that the bird in question belongs to this species. If carefully watched, the black wing-tips of the male will be found clear cut and more extensive than in the male Pale Harrier.

DISTRIBUTION. Europe and Northern Asia, and migrating south to Africa, India and Eastern Asia. Migrant in Saurashtra during Winter.

FOOD. Same as the last.

MARSH-HARRIER

Gujerati Name—Pān Paṭṭāi

Circus aeruginosus aeruginosus LINNAEUS

See Coloured Plate 4.

SIZE. Slightly smaller than the Pariah Kite.

IDENTIFICATION. Much like the other Harriers already mentioned, but it is easily recognised by its much darker colouration, especially in the immature birds. The adult male bird is brown with a patch of grey on the wing-secondaries and coverts and also on the tail; the rump patch is rufous-grey. The adult female rarely has grey on her tail and is darker with creamy crown, throat and shoulder. The immatures are uniform chocolate, or earthy-brown, and have no patch on the rump or upper tail-coverts but a conspicuous creamy-white cap on the head in varying degrees. Traces of the same colour may be seen on the scapulars and the chin. From a distance, this bird somewhat resembles the Common Kite and, but for the forked tail, may be mistaken for one while flying. The eyes are yellow in the adult birds and reddish-brown in the immatures. As its name implies, the Marsh-Harrier is seen near water and prefers marshy ground where there are plenty of reeds. Its flight is the typical gliding and slow flapping one of the Harrier. The wings are held slightly above the line of the body. It is not always that we come upon a bird in adult plumage, but the immature birds are commonly seen.

NOTES. Lakes, jheels, river-beds and running streams with reeds on the sides are the places to look for this bird. It is fairly common and usually seen singly in its natural environments. Like other Harriers, it scans the reeds while hunting by flying low over them and drops suddenly on its prey. By its dropping into muddy water in an attempt to catch its prey, or by its alighting in wet marshy ground, the feet and feathers often become dirty. Although the birds that we see are Winter visitors, I have noticed some remaining with us until mid-July which is the middle of their breeding season. I have often suspected them

breeding close to their Winter quarters, but have never found them nesting. The remains of plucked and eaten Waterfowl seen in river-beds is usually the work of this bird.

DISTRIBUTION. Its breeding range is not clearly known. It has a wide distribution over Central Asia and Europe, and is found throughout India during the Winter months. Common in Saurashtra, Kutch and Gujerat as a regular migrant during the cold season.

FOOD. It feeds on voles, rats, mice, frogs, snakes, Dabchicks, Coots, Moorhens, Stilts, and other Water Birds. It readily captures wounded Ducks ; yet it seems a merciful intruder after the Duck shoot is over as it kills many of the wounded birds which otherwise would die a lingering death. Just before the shoot, however, it is often most annoying to see it flush Wildfowl at most untimely moments. But I don't think it, in fact, disturbs Ducks enough to drive them away from water as is believed by some sportsmen. On the whole, it seems to be beneficial in its Winter quarters because it rarely catches the Duck or Teal but preys upon water-rats, mice, frogs, snakes, and sometimes insects, though I have seen it capture Stilts, Dabchicks, Coots, and Moorhens. Most of its hunting is done by surprise attacks, by turning or swooping upon its prey or, as commonly seen, by dropping suddenly from above.

SHORT-TOED EAGLE

Gujerati Name—Sāpmār

Circæetus gallicus GMELIN

See Coloured Plate 2.

SIZE. Larger than the Pariah Kite.

IDENTIFICATION. A very large Hawk-like Eagle having long legs with much of the tarsus unfeathered, a large head and a comparatively small well-curved beak. Nostrils, oval; toes, small; eyes, large and Hawk-like and in colour golden-yellow to greenish-yellow in adult birds, orange in older birds and brown in young ones. The forehead and head appear whitish in some individuals. The upper-parts vary from light to greyish-brown, with a few white feathers showing; the lower-parts are white with brownish-grey streaks on the breast, appearing like a grey patch from a distance. The tail is barred with broad bands, and the flanks are banded sparingly with brown or grey. This large Eagle is found in open as well as hilly country. Solitary trees are its favourite perch. It is seen singly, and is usually a shy bird taking wing even from a long distance. While flying, it has a graceful wing-beat and a wide wing-span. From below, the wings appear white and barred. It is often seen hovering quite

high, much like a Kestrel, with the wings beating and the tail spread-out, remaining at the same spot to watch for some prey to appear down below.

NOTES. This is the most cowardly of all our Eagles and it is harmless to large birds and mammals. It is fairly common wherever there are plenty of thorny bushes and trees, in open grassland with stunted trees, semi-desert country and dry hills. It emits a whistling call as well as a shrill yelp.

DISTRIBUTION. Europe, North Africa and Asia. The whole of Saurashtra, Kutch and Gujerat. Resident. Locally migratory.

NESTING. Season—December to May. It nests on trees in scrub jungle as well as on solitary trees in open country. The nests are more or less flat, consisting of sticks with hardly any depression in the centre. However, many nests I found were oblong in shape and had sufficient room for the parent bird to squat without showing itself. It often occupies the nest of the King Vulture. One white roundish egg is laid. I have found it breeding in extensive thorny jungle on the side of hills where the nest was conspicuous and the tree about 12 feet high. Stunted trees in the desert region of N. Saurashtra are also used. During the breeding season, it emits a whistling call not unlike that of a chicken. When incubating, the bird sits tight and crouches when approached.

FOOD. Consisting mainly of small snakes, lizards and small rodents. Occasionally, birds are also taken. It hunts during the hot hours of the day and in the evenings; most of its prey is caught on the ground or amidst thorny bushes. It frequently hovers while hunting and soars fairly high up, waiting for lizards to appear on tops of thorny bushes, and snakes to come out and bask. The unfeathered lower legs enable it to catch its prey in thorny bushes with ease, and the hard scales protect it from poisonous snakes. However, most of the snakes killed are non-poisonous. It seems to be a useful bird, ridding cultivation of harmful pests.

INDIAN SERPENT EAGLE

Gujerati Name—Chotāliyo Sāpmār

Spilornis cheela LATHAM

See Coloured Plate 5.

SIZE. Rather larger than the Pariah Kite.

IDENTIFICATION. Upper-parts, dark blackish-brown with a round black and white crest; lower-parts, rich reddish-brown, almost brick-red, with rings and half rings of white, more numerous on the flanks. The crest is not normally erected but rests along the nape; when erected, however, it appears fan-shaped.

The eyes are golden-yellow in some birds; others have a slight greenish tinge. The legs are long, unfeathered and pale yellow. The tail has two broad black bands of which one is subterminal and is tipped with buffy-white. The yellow orbital skin near the eyes can be seen from a fair distance. This Eagle is uncommon, keeping to well-wooded areas close to water. It is not very shy, at times it is even remarkably tame. In flight, the under-wing and tail appear barred with an 'L' or hockey-stick-shaped white band running along the wing, and a broad white band on the tail is observed when seen from below. The flight is graceful and the wings are slightly kept upturned while gliding. The birds soar fairly high up and call frequently to each other. Immature birds have the upper-parts mottled with tawny and dark brown; the crown and crest are buffy-white, spotted with blackish-brown; the lower-parts, from chin to vent, are white, often streaked with brown; the cheeks are black; the tail has four dark bars, but three are visible from below.

NOTES. They prefer green trees to rest in, and the many I have seen perched were in the 'Neem' (*Melia azadirachta*) trees amidst thick vegetation. They like damp vegetation next to water. The call is a shrill double whistle, e.g., *queee-queee* or *quēa-quēa*. Often a pair may be seen or heard calling in the air. And yet a bird may be seen flying low in the forest.

DISTRIBUTION. Resident and locally migratory in most parts of India. Resident in Saurashtra, being restricted to the Gir Forest and its environs, and straggling into other parts of the peninsula.

NESTING. Season—February to April. The nest is built on a large tree in a forest area. It is not a big nest but has a deep egg cavity and is lined with green leaves. One beautifully coloured egg is laid. It is broad with a white ground and blotched with light or deep red. The eggs vary, some having purple markings. The female alone incubates.

FOOD. Its preference to feed on all kinds of snakes is noticeable, and it attacks even large poisonous snakes. It is a fairly courageous Eagle, preying upon other wild life, also. I once saw it capture a wolf-snake in the Gir. The bird erected its crest and spread-out its wings and tail-feathers in defiance and, clutching the snake in its feet, crippled it entirely with one or two quick snaps on the neck. After some time, it began feeding on the snake on the ground.

PEREGRINE FALCON

Gujerati Name—Bhéri ♀ Bhéribachō ♂

Falco peregrinus TUNSTALL

See Coloured Plate 4.

SIZE. Larger than the House Crow.

IDENTIFICATION. Adult female: Upper-parts, dark slate to light ash-grey. The dark moustachial stripe is often very broad, and the wide band on the side of the neck is black. Lower-parts, from chin and cheek to abdomen, white, tinged with light to dark buffy-pink and barred with black and tipped with off-white. The long primaries are well-shaped and, while in resting position, come almost in line with the tail. The eyes are black; the short, rounded and hooked beak is grey and tipped with black. Legs, yellow to orange, short and feathered to the knee; feet, large; toes, long, the middle one being the longest and all having sharp black claws. At a distance, the bird gives an impression of being barred black and white on the lower-parts, and uniform grey on the back and upper-parts. The adult male differs in being much smaller, two-thirds the size of the female. In immature plumage, the upper-parts are light to dark brown or greyish-brown, nearly blackish in some cases. The lower-parts vary a lot, ranging from white or almond to reddish-brown or rufous, and marked longitudinally with thin or broad stripes of the same darker colour or of black; some specimens are blotched on the feathers of the lower-breast, flanks and leg-coverts while others are finely streaked. The birds vary considerably in colour, size and pattern. In some, the barring on the tail is faint or obsolete, and these are known to Falconers as 'Luggad Dūmi' i.e. like the tail of the Laggar. In some immatures the feet are bright yellow, while in others they are greenish-yellow or bluish-grey. Birds in intermediate plumage, from one to three years, have a mixture of adult and immature plumage. Barring mixed with stripes may be seen on the breast or flanks. The upper-parts are also mixed with grey and brown feathers. The complete adult plumage is assumed after the third year, but earlier in some birds, depending upon the success of the moult. Sexes alike.

NOTES. The general characteristics of this bird are its resentment for a close approach, its rapid and continuous wing-beat during flight, and its preference to remain in the vicinity of water. It is migratory and one of the greatest travellers. The 'Bahri' of Falconers, derived from the Persian word 'Baher' meaning sea, is a truly appropriate name, for it is always found near the sea coast. In America it is called the Duck-Hawk because it chiefly preys upon Ducks; but the English name, Peregrine, meaning a traveller, is the most appropriate of all. This Falcon is specially adapted to speed, to long distance flights, and to killing birds in the air. It is found all along our sea coast, and on inland lakes and

rivers, where its chief food, such as Waterfowl, Quails and Pigeons, is available. It prefers to hunt in flat open country and roost on cliffs or in shady trees. In flight it is fast and has a continued wing-beat which it maintains, rarely gliding, if at all. Normally, the flight is low along the ground or over water, but on migration, it flies fairly high. On the sea coast, it prefers to rest on ledges of high cliffs and rocks, or on banks of rivers. In the early morning and evening, it is frequently seen sitting on rocks by the shore, either well-fed or ready to take off. Sometimes one gets a passing glimpse of it as it swiftly flies in pursuit of its prey. In the afternoon, it often soars for basking. A happy full condition is indicated by its ruffling the plumage while flying. This characteristic is seen in all Falcons, Hawks and Eagles. The bird always chooses quiet places for resting where it is least disturbed. Tanks that hold plenty of Duck and other Waterfowl during the cold season will very likely have a Peregrine nearby, especially if there are large trees on its sides. Seclusion is what it enjoys most, and only an old bird which has seen many seasons will allow itself to be watched at close quarters. Such a bird may be seen perched on a high building or tall tree in cities. Peregrines begin to arrive about 'Dashera' time, the first week of October, immatures as well as old birds coming singly or in pairs; generally the adult birds arrive first. I once watched a pair with the young still being fed by their parents. This was at Hathab on the Bhavnagar coast. And a similar family was observed by H.H. the Maharaja Sahib of Bhavnagar at Gopnath. However, it is not often that we see on our coast such young birds which are still unable to feed by themselves. Adults, once they have established their hunting and roosting grounds, drive away other birds from the area, and it is only a true pair which will tolerate each other, even driving away their fully fledged young when they begin to feed on their own. Immatures which have established their territory will also drive away other immature trespassers and will even resent the approach of adult males. Most Peregrines seen on the Eastern Saurashtra sea-board prefer the cliffs and mud-flats which supply good roosts and food respectively. The Bhavnagar coast is, therefore, ideal to study the Peregrine. During migration, many birds pass over all parts of the country on their way to Bombay and southwards. The return migration is seen during March and April, and the birds have been noted to stay on until the end of May. The call is a harsh *keh-keh-keh-keh* which is seldom heard. When two birds fight, they emit a characteristic call, *keek-keek keek-keek*. The Peregrine is greatly prized by falconers on account of its speed and courage. It is known to capture birds as large as the Eastern Common Crane, and in Bhavnagar this feat has been actually accomplished. During Duck shoots, the trained Peregrine can be utilized to keep the Wildfowl down and thus afford the sportsman more shooting. Ducks in flight, when hard pressed by the Peregrine, plunge into water with a splash and are reluctant to rise again so long as the Falcon is above them.

DISTRIBUTION. Breeding in Europe, Northern Siberia, Central Asia, Asia Minor to Persia, and perhaps in the Persian Gulf. It is a regular migrant into India including Kutch, Gujerat and Saurashtra. Not uncommon.

FOOD. Live birds, mostly taken on the wing or struck down with one blow while in air. On account of its swift flight it can overtake the fastest birds, either by sheer speed or by diving from above. Older birds use both methods frequently but the immatures generally depend more upon their speed to over-take their prey. From October to December the main food of this Falcon consists of Shore Birds, Common Quail, Rosy Pastor and Pigeon. From mid-Winter till March, Ducks of all kinds are taken. But much of the food depends upon the migration of birds; Quails is the chief food, and the Peregrine will capture them when they are flying over the sea while migrating. In fact the Peregrine will wait for such an opportunity. Rosy Pastors are also taken, but more so by immature birds and Tiercels. Plovers of all kinds are also preyed upon and even Sandgrouse. Here is a list of some of the species that have been recorded as natural prey of the Peregrine: Quail, Sandgrouse, Reef Heron, Pond Heron, Egrets, Rosy Pastor, Tern (Gull-billed), Curlew, Whimbrel, White-breasted Kingfisher, Grey Wagtail, Rock Pigeon, Doves, Lesser Florican, Lapwings, Small Plovers of different kinds, Sandpipers, Stints, Cormorants, Babblers, Short-eared Owl, Stilt, Greenshank, Redshank, Ruff, Coot, Snipe, Teal, Ducks, Larks, Pipits and Mynas. The Peregrine is an early riser, hunting before and after dawn, and then again commencing as early as 2.30 p.m. until sunset. Having fed on large birds in the morning, it does not require food until the next morning. In fact, the best time to witness the Peregrine is in the early morning. Like all Birds of Prey, it ejects undigested food from the mouth in the form of a pellet which is known as the casting; this it does usually in the early morning.

SHAHIN FALCON

Gujerati Name—Shāhin ♀ Shāhinchā ♂

Falco peregrinus peregrinator SUNDEVALL

See Coloured Plate 6.

SIZE. Somewhat larger than the House Crow.

IDENTIFICATION. This is a smaller replica of the Peregrine and differs from it only in being slightly darker. The upper-parts are dark greyish-black and the lower-parts are warm buff to rusty reddish-brown, not invariably lighter on the upper-breast. Eyes, black; legs and feet, orange-yellow. When seen

closely, it is distinguished from the Peregrine by the presence of a reddish-brown nuchal collar. This is, however, not a certain pointer to its identity. This Falcon can be compared with a large edition of the Indian Hobby. It is of compact, round shape and its pointed wing-tips reach to the tip of the tail. The immature plumage is like that of the Peregrine, but in some birds the upper-parts are darker and the lower-parts more finely streaked with reddish-brown while the tail has a slightly more reddish-brown tinge. Again, the immature plumage generally has no light edges to the upper-parts. The legs in immatures are yellow. The Shahin is more of a mountain and woodland Falcon, preying largely upon land birds. With us, it is seen during Winter. It is found in hilly areas but is on the whole rare, though found on the coastline occasionally. Sexes alike but the male is much smaller.

NOTES. In flight, it resembles the Peregrine and it is very difficult to tell the difference between the two in the field. I should say that the Shahin appears more compact and has a more rapid wing-beat though the wing-stroke is not so forceful as that of the 'Bahri.' Moreover, the Shahin appears much more reddish-brown on the under-parts with a broad black blotch behind the eye and on the face near the side of the neck. Then, again, while pursuing its quarry, it does not continue for such a long distance and most of its hunting is done at a greater height and less often near the surface of the ground as is the case with many Peregrines. Falconers consider the Shahin a noble bird, and there is no doubt that it is more docile and less likely to forsake the trainer than the Peregrine. In flight, it is considered the swiftest Falcon but only for a short distance. It would be advisable that only the experienced bird-watchers who are well-acquainted with this bird and the Peregrine should confirm its identity in the field.

DISTRIBUTION. Most parts of India including Gujerat and Mount Abu but rare in Saurashtra. The Girnar is the only mountainous area in Saurashtra where it may be seen from time to time, but it certainly straggles over to the Barda hills and to the sea coast and over the Gir hills as a Winter migrant. I have no substantial evidence of its being resident in Saurashtra.

NESTING. Season—February to May. It is known to breed in holes or cavities on very steep and inaccessible cliffs or gorges where it is impossible to reach without the aid of ropes. A nest of sticks and leaves is sometimes made, while in some cases the eggs are laid in a depression on the bare surface. They number two to four, and are brick-red. The only suitable place for the Shahin's breeding with us is the Girnar or the Datar Hills.

FOOD. Its food consists mainly of birds either caught in the air or struck down by a powerful stroke of the talon. It feeds on a great variety of species but mostly on Parakeets.

RED-CAPPED FALCON

Gujerati Name—Lāl māthāni Shāhin

Falco peregrinus babylonicus P. L. SCLATER

SIZE. Somewhat larger than the House Crow.

IDENTIFICATION. This is a large replica of the Red-headed Merlin, or 'Tūrūmti', without the subterminal black band on the tail; also, it has some grey on the breast and is in shape more compact. The females vary in size considerably; some I have seen were as large as any good-sized Peregrine. The size of the male is about that of a Kestrel. It is a bird of open country, preferring barren mountains and valleys and semi-deserts. It is as fast as the Black Shahin, and in flight resembles the Peregrine. Immature birds are like those of the Peregrine, not like the young Red-headed Merlins. Their lower-parts are suffused with buffy-white to rusty-red colour and finely streaked with light brown. On the head there is a reddish tinge, and they sometimes have a faint reddish nuchal collar. When attempting to identify them, one should try to note the reddish-brown tinge on the upper tail-coverts and tail which is more pronounced than in the Peregrine. The legs are bright yellow in immature birds and orange in the adults.

NOTES. With us, this bird is more commonly seen than the last species, and it seems to prefer open country during the Winter months. Adult birds can be recognised in flight by their rusty-red heads. This species is used in Falconry and is also known as the Red-headed Shahin.

DISTRIBUTION. Breeding in the N.W. Frontier Province, Baluchistan and Afghanistan, and migrating south into India during the cold weather. In Saurashtra, it is rare but less so than the last species.

FOOD. Waterfowl and a variety of birds taken on the wing or struck down by the feet. The female is utilised by falconers to take Ducks, Partridges, Floricans and other quarry as large as Cranes. I have seen it preying upon Parakeets, Pigeons, Starlings, Larks, and Shore Birds. The male captures birds the size of a Lark or Starling.

LAGGAR FALCON

Gujerati Name—Luggad ♀ Juggad ♂

Falco jugger J. E. GRAY

See Coloured Plate 5.

SIZE. Larger than the House Crow.

IDENTIFICATION. Adult: Upper-parts including the tail, brownish-grey; lower-parts, white with dark brown longitudinal streaks on the breast. There is a slight rufous tinge on the feathers of the head. A dark moustachial stripe on the face is conspicuous. Eyes, blackish-brown; feet, yellow to orange. The tail is fairly long, the tips of primaries falling short of it and the two central feathers uniformly coloured; in some birds, there is no barring on the tail. In immature plumage, the bird is almost uniform dark brown; upper-parts, brown to dark blackish-brown; lower-parts, blackish-brown to earthy-brown; feet, bluish-grey; beak, grey; head, often creamy-white and streaked with brown. In intermediate plumage, the breast is mixed with brown and white, and the grey on the upper-parts is less pure. The Laggar is a desert Falcon and quite different in habits from the Peregrine. It is sluggish and, in Winter, usually hunts after the sun has risen. At mid-day, it enjoys soaring and swoops on to some prey which is unaware of its presence. It also robs other Hawks and smaller Birds of Prey of their food, including those of its own kind. This is a common Falcon seen in open country and rocky hills, and even in scrub jungle. It prefers flat country as well as open hills, keeping away from thick forests. It is found in desert areas and is quite at home in the hottest parts of the country. In flight, it is distinguished from the Peregrine by its longer tail and by the fact that it indulges in much more frequent gliding between the wing-beats, and also in its being less shy.

NOTES. Laggar Falcons are commonly met with during the Winter months all over the countryside. From April to September, they are scarce. Those that have been breeding disperse into adjoining districts after May, and at times not a single bird is seen in the breeding areas. The male or 'Juggad' is smaller and weaker than the female or 'Luggad'. During the breeding season, both the 'Luggad' and the 'Juggad' hunt together. They remain in pairs even after the breeding season, and I have found that this facilitates the capture of food. They are able to kill some of the fastest birds, such as Doves and Pigeons. The method employed consists of one bird flying along the ground while the other dives from a height, pulling up and diving again, or by both the birds diving one after the other repeatedly, rising up into the air as they miss and coming down with full speed to repeat the attack. After they have killed their prey the female generally aids in feeding the male. Laggars are sometimes seen perched on poles and tops of solitary trees by the roadside, but they should not be confused with White-eyed Buzzard-Eagles.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common.

NESTING. Season—January to April, most birds laying in February and March. The nest is usually an old one of some large bird, and the Laggar merely repairs it. I have rarely seen the birds making an entirely new nest, but old eyries which have been used for many years together may have been originally made by the parent birds. I have seen them using old nests of the Black-necked Stork, huge platform nests on top of high trees. One of these was on a 'Pipal' (*Ficus religiosa*) tree about 60 feet high. They also use old Kite nests and sometimes those of Vultures. Most nests that I have found were in green 'Ficus' trees. Yet some birds may breed on the crags of hills. During the mating season, they call to each other frequently and are not at all shy. I have seen the birds mating near the nest while I was under the tree. During the courtship display, I have seen the female as well as the male displaying in a characteristic manner by flapping and gliding with the wings held above the horizontal line. And this characteristic is so pronounced even at other times that the species can be immediately distinguished from the Peregrine Falcon or the Shahin. Two to four eggs are laid, ranging from light to dark rusty-red in colour, much like those of the 'Tūrūmti' but larger. Some of the old nests in which the eggs were laid were full of small lice, and the old birds are full of lice of a larger species. During the incubation period, they are reluctant to leave the eggs, but once disturbed, they are rather shy. I have often watched a pair mating even after the full clutch of eggs were laid. Birds nesting within the same tree as the Laggars are unmolested whereas the same species may be killed elsewhere to feed the young. The young have pale edges to the feathers of the upper-parts.

FOOD. Mammals, reptiles, birds and insects. On the coast, the birds feed on Shore Birds and show remarkable speed. I have seen Laggars take Doves, Pigeons, Parakeets, Egrets and Quails, and a host of other birds. To obtain food, they rob other Hawks of their prey. Most of the hunting is done after sunrise but many hunt before dawn. Like all other Birds of Prey, undigested food is rejected in the shape of a pellet. Such undigested matter as feathers or bones is swallowed with the food and is necessary to help digestion. When trained, the Laggar "waits on"* well, and birds like Partridge, Duck and Florican afford excellent sport to falconers.

* A term used in falconry when a Falcon circles high above, waiting for the falconer to flush the quarry.

SAKER FALCON OR CHERRUG

Gujerati Name—Cherug ♀ Cherugélō ♂

Falco cherrug cherrug J. E. GRAY

See Coloured Plate 5.

SIZE. Between the Jungle Crow and the Pariah Kite.

IDENTIFICATION. Very much like the Laggar in general appearance but larger. It is a desert Falcon which is found in flat open country and on the sea coast. There are two distinct colour phases in this species, a light one and a dark one, but many birds are intermediate. Adult light variety: Upper-parts, light cinnamon; lower-parts, creamy-white or chalky and striped longitudinally with cinnamon-brown; tail, spotted with white, or barred and tipped with dirty white; eyes, blackish-brown; beak, bluish-grey; feet, greenish-yellow to greenish-grey, or yellowish-green. Dark variety: Upper-parts, brown to dark brown; lower-parts, dark brown with less of white showing on the breast. In both the phases the forehead is chalky-white and most of the crown is dirty white, streaked with brown. In immature plumage, the bird resembles the adult but differs in being slightly less bright; also, the legs are invariably bluish-grey. However, it is difficult to separate adults and immatures in the field, and still more the birds between one and three years old. The male is slightly smaller. The female is distinguished from the Laggar by her much larger size as well as by the conspicuous white spots on the tail-feathers which are seen when the tail is spread-out, while the breast is not so white nor the upper-parts mixed with so much grey. All birds, however, do not possess a tail spotted with white; some have bars and others are almost plain. The Saker is found during Winter in extensive open grasslands and desert areas, rarely in hilly tracts but more often on the coastal belt.

NOTES. The Saker is usually a late riser, hunting when the sun is high up. It soars into the sky and then suddenly swoops upon its prey. In flight, it is fairly fast and resembles the Laggar in its wing-beats. Indian falconers have made full use of this bird and succeeded in training it to catch large quarry such as Bustards, Kites, Owls, hares, and even 'chinkaras' on which it is trained to attack in pairs, accompanied by dogs. The birds usually strike on the head or neck, and then endeavour to hold on until the dogs come to their aid. Excellent 'ringing' flights are seen when they are flown at the Kite or Short-eared Owl.

DISTRIBUTION. Breeding in Western and Central Asia, and migrating southwards into Northern India as far as Saurashtra during Winter. The bird is not uncommon in the desert tracts of Northern Saurashtra, Kutch, and N.W. Gujerat. I have seen it occasionally at Wankaner and as far south as Bhavnagar. It is an irregular visitor in very small numbers to the Bhal area of

Bhavnagar. Most of our birds arrive at the end of November, only to remain for short periods during the cold months.

FOOD. In Northern Saurashtra, it feeds largely upon desert lizards known as 'sāndhas' and locusts, but in other areas Rosy Pastor, bloodsucker lizards ('kānkīdas'), and smaller reptiles are within its diet; other birds and rodents such as gerbilles are also eaten. For the size of the bird, the feet are small but fairly powerful. It strikes birds down in a series of vertical swoops, disabling its prey first and then catching it; yet many are captured by direct attack. Much of its food consists of that which it robs from Birds of Prey not larger than itself.

HOBBY

Gujerati Name—Dhoti ♀ Dhūtār ♂

Falco subbuteo LINNAEUS

See Coloured Plate 6.

SIZE. Slightly smaller than the House Crow.

IDENTIFICATION. Upper-parts, dark slate; lower-parts, whitish and with V-shaped markings of brown; abdomen to vent, reddish-brown. In appearance, the Hobby is a miniature replica of the immature dark variety of the Peregrine but has exceptionally long-wings which overlap the length of the tail. In fact, it can be easily confused with the male Peregrine or Tiercel in general appearance and flight. Eyes, blackish, and legs, orange-yellow. Moustachial stripe present. Immature birds are less richly coloured and their upper-parts have pale edges to the feathers; the lower-parts are paler and lacking the reddish-brown vent of the adult male. This bird is found in the forest but may be seen in open country while migrating. The flight is swift and the bird can turn smartly in the air. It also has a slow flapping, half gliding, flight. The male is slightly smaller than the female.

NOTES. Hobbies alight on tall trees in woodlands or plantations, close to water. They may be seen on the seashore in early mornings and late evenings. Birds on migration have been observed by me as early as August, and those coming later seem to arrive in scattered batches. Although arriving earlier, their migration coincides with that of Peregrines. On the coast, they may be encountered sitting on mud-flats, beaches, sand dunes, or wide stretches of open land, just in the same manner as Peregrines. The return migration is seen in March and April. This bird, too, is used in falconry.

DISTRIBUTION. It has a very wide breeding area, from Europe and Central Asia to almost China and south to the Himalayas. During the cold season it

migrates south into most parts of India and Saurashtra. Uncommon but regular migrant.

FOOD. It preys chiefly upon bats and large insects, but also feeds upon smaller birds. I have seen it take Swifts and Swallows. While chasing its prey, the wing-beats are rapid, and it is at that time that it may be confused with the male Peregrine or male Shahin; but ordinarily the flight is not so fast, and it often glides buoyantly like a Tern. Moreover, it does not pursue its prey for long but makes short spurts after it. It is capable of making quick turns in the air, and it, then, somewhat resembles the Swift. Most of its prey is taken on the wing, either by pursuing it or by swooping upon or striking it. The feeding time is just before and after sunset, and at dawn; it always prefers areas close to water and over woodland. It may be seen hawking close to lakes and tall trees, and in forest. I have often seen it amidst sand dunes and on the shore in semi-desert country. Birds may be seen resting on the ground, and it is not unusual to find four or five birds in the same area. I have seen them capture Quails and Wagtails on the sea coast, but their usual prey is the pipistrelle bat which they catch with ease and generally eat while flying. It is this characteristic which immediately distinguishes it in the field from the male Peregrine. Moreover, it is much more crepuscular.

INDIAN HOBBY

Gujerati Name—Bhārati Dhoti ♀ Dhūtār ♂

Falco severus rufepedoides HODGSON

SIZE. Slightly smaller than the House Crow.

IDENTIFICATION. This bird is a miniature replica of the dark variety of the Shahin (*Falco peregrinus preregrinator*). Upper-parts, dark slate to dark grey; lower-parts, reddish-brown to rich ferruginous, sometimes faintly streaked near the breast or conspicuously marked below; legs, orange-yellow; eyes, black. In habits, it resembles the last species and may be seen in the same type of country. The male is slightly smaller than the female.

NOTES. Like most Hobbies, it prefers tall trees and alights on the slender top-most branches, but on the sea coast it is often seen sitting on the sandy shore or sand dunes, very much like the Peregrine. It frequents woodlands, skirting the forest while hunting. Indian Hobbies have a regular migration, and in some years they are fairly common while in others only a few are seen. During migration, I have met sick birds which could hardly fly. In flight this is a delightful bird to watch as it makes spectacular turns in the air to catch its prey, and

accelerates its speed while in pursuit. On the sea coast, it hunts the bats which emerge in large numbers from caves just after sunset. It does not as a rule hug the ground while pursuing its prey as does the Peregrine but prefers to keep to a certain average height. The Indian name for the female Hobby, 'Dhoti', is also used for the Besra.

DISTRIBUTION. Breeding in most parts of the Himalayas and migrating south to India including Gujerat and Saurashtra, and possibly Kutch. With us, it is a regular migrant and is not uncommon during the proper season which is from September to November and again from March to April.

FOOD. Much the same as the last species. It is more crepuscular in its feeding habits than the larger Falcons. After catching its prey, it feeds on it while in flight. However, this is not always the case though it is a characteristic worth noting.

RED-HEADED MERLIN

Gujerati Name—Tūrūmti ♀ Chatvā ♂

Falco chicquera chicquera DAUDIN

See Coloured Plate 6.

SIZE. About that of the Pigeon or the Ring Dove.

IDENTIFICATION. A small replica of the Red-capped Falcon or 'Saféd Shahin'. In shape, however, it is comparatively slimmer and has the wings proportionately shorter than those of the Shahin. Head to nape, rusty-red; rest of upper-parts, grey, each feather having a black shaft-line; tail, grey, barred with black and having a subterminal black band tipped with white; lower-parts, white, streaked with brown on the upper-breast in some birds, and barred with black to greyish-black on the belly and flanks; legs and feet, yellow to orange; eyes, black. The male, which is called 'Chatvā', is smaller than the female. Immature birds resemble their parents but differ in being less heavily barred and in having the feet a purer yellow. This is a fast flying little Falcon and very active. The short wings and longish tail give it an appearance somewhat like a Shrike when in flight, but it is much faster. During flight the wing-beats are continuous, the bird rarely, if ever, gliding in between. These Merlins are found in all types of open country, but never in thick forest. While hunting, however, it often passes over scrub jungle.

NOTES. Although one may come across them singly at any time, these birds are usually seen hunting in pairs in the early morning and just before sunset even during the non-breeding season. In this way, and in their other habits,

they resemble the Peregrine and the Shahin. The flight is straight and usually close to the ground. They also give full chase to small birds, 'ringing' high up into the sky. Falconers train the bird to fly at Rollers, Hoopoes and Nightjars, all of which 'ring' high up and thus afford good sport. It is a courageous little Falcon, for it can be trained to capture birds as large as Cattle Egrets and still larger White Egrets.

DISTRIBUTION. The whole of India and Saurashtra. Resident. Fairly common but not often seen.

NESTING. Season—December to April. Nests of Crows are often made use of, being rebuilt or repaired. Large or small trees are selected as sites for nesting. Most nests are well-concealed by leafy branches. The trees commonly utilised are of the 'Ficus' varieties and the 'Neem'. Three to four reddish to rusty-red eggs are laid. They resemble those of the Laggar but are much smaller. The parents maintain a vigilant guard over the nest, driving away Kites, Crows and other birds which try to trespass. They keep uttering a sharp call, *kik, kik, kik, kik, kik, kik, kik*, as they dive upon their assailants which may be either perched or flying.

FOOD. The food consists of small birds, *e.g.*, Larks, Swallows, Rosy Pastors, Pied Cuckoos, Mynas, Sparrows, Swifts, Pipits, Ringed and Kentish Plovers, other small Shore Birds, Quails, Doves, Babblers, and Bulbuls; bats, mice, lizards, and large insects are also taken. Most of their prey is taken on the wing, but rodents and insects are often picked up on the ground. They are generally seen hunting in pairs. While hunting, they adopt two methods: firstly, by flying low over the ground and trying to pick up any bird that rises in front of it, which often culminates in a 'ringing' flight; and secondly, by flying at a medium height from which it dives upon or pursues its prey with ease.

KESTREL

Gujerati Name—Larji

Falco tinnunculus LINNAEUS

See Coloured Plate 6.

SIZE. About that of the Pigeon.

IDENTIFICATION. Adult Male: Upper-parts, brick-red spotted sparingly with black; head, light grey and with a moustachial streak on the face; eyes, black; legs, yellow; tail, longish and grey, and with a black subterminal band tipped white; lower-parts, light to dark almond and streaked with brown all over. The female differs in being mottled and barred above with brownish-black colour

and having brownish-yellow lower-parts. Some birds are heavily marked, others lightly. The head is browner while the tail is barred and of a similar colour to the back. Immature birds are more boldly barred than the adult female. The Kestrel is commonly seen during the cold months, arriving about September. There is probably no place where it is not seen. It has a slow flight and, while hunting, hovers as if suspended in mid-air, sometimes with out-spread tail.

NOTES. In shape, it is much like the Red-headed Merlin, but much slower in flight. Whereas the Merlin prefers to hunt during the cool hours of the day, this bird enjoys hunting even during the hot hours. It does not keep to an extensive hunting area. As a rule, Kestrels resent their own kind encroaching upon their territory and show it by calling repeatedly in a disturbed manner, *killy-killy-killy-killy*. This call is frequently heard soon after their arrival in the country. They are not shy as some other species of Falcons are. They often perch on houses and posts, roosting under roofs where they can find a perch or on low trees. Cliffs and steep rocky shelves are also favoured for roosting.

DISTRIBUTION. Found in Europe, and North and Central Asia, and migrating southwards in Winter. Common in Saurashtra, Gujerat and Kutch during the cold weather. The birds arrive as early as the end of August and leave in April. The Indian Kestrel, *objurgatus*, which has brighter brick-red and rufous colouring in both sexes, may also occur in Saurashtra. It breeds in hilly districts of South India and the Bombay State.

FOOD. The chief food is locusts, grasshoppers, mice, and lizards. Small birds are sometimes taken. Kestrels hunt by hovering in the air or by waiting at some high point of vantage watching for some insect or lizard to move and then diving down to capture it. Most of their prey is captured on or close to the ground. They are seen hunting in hills, scrub jungle, grasslands, cultivation, and even near towns.

OSPREY

Gujerati Name—Machhimār

Pandion haliaëtus LINNAEUS

See Coloured Plate 2.

SIZE. About that of the Pariah Kite.

IDENTIFICATION. Upper-parts, dark brown, at times giving a blackish-brown effect. Lower-parts, white, with a thin chain of brown streaks on the breast. The head has a small roundish crest which is almost white. The eyes

are yellow, but darker in some birds. The legs are grey and not feathered to the toes. The soles of the feet have spiky serrations which enable it to hold fish firmly. The bird is a real fish-hawk. It is nearly always found over large expanses of water, either flying or perched on a dry branch, telegraph post or similar prominence immersed in or close to water. While migrating, however, it is often seen away from water. In Winter it is common on the coastline. The flight is very graceful and slow, the wing-beats carrying the bird buoyantly in the air. The wings are long and well-shaped. The tail is brown. In flight, the white lower-parts and underside of wings, coupled with its habits, distinguish the Osprey immediately. It is seen wherever there are large lakes and rivers, and all along the sea coast. It is a shy and solitary bird, taking wing as soon as one approaches it. Sexes alike.

NOTES. The Osprey is a strong flier and is capable of withstanding roughest weather. It is one of the very few Birds of Prey which I have seen flying in almost stormy weather. Its appearance, at times, is quite sudden and one may sometimes see it well inland away from any water. I have seen it in every month of the year. Though most of the birds are seen during Winter, some arrive as early as August or September and depart in May. I have never found it breeding with us. It is solitary in habits and drives away any new comers to its feeding ground.

DISTRIBUTION. Throughout India and Saurashtra. Common Winter migrant. The species is widely distributed throughout the world.

FOOD. Mostly fish, both salt and freshwater. The method of hunting is by hovering in mid-air with slow backward wing-beats. The bird appears so graceful and buoyant in flight that it can hardly be mistaken. With its dark brown and silver-white plumage showing high above the water, it gives the whole landscape an added beauty. It is indeed fascinating to watch Ospreys diving for fish; they leave the bird-watcher amazed and speculating on its success. The odds are against the Hawk but I would not like to take the chance of being the fish. It keeps to a fairly good height while fishing but does not hover for a long time. In doing so, if it sights a fish close to the surface, it plunges almost perpendicularly into the water, sometimes completely disappearing below the surface for a second or two and then, if successful, carries its prey in its feet and flies low to the nearest land or perch to feed. If the plunge is unsuccessful, it rises from the water flapping heavily and, then, shaking itself in the air, resumes hunting. If it does not soon discover a fish while hovering over one place, it immediately flies forwards and begins hovering over another. It may, in this way, fly forwards along the course of a river, and then turn to work backwards. Rivers, lakes and pools are exploited, and on the sea coast, the bird may work many miles near the coast or out at sea in search of food. It seems to prefer clear waters, and yet I have seen it fishing in muddy water. Fish as heavy as

5 lbs. are sometimes caught, but the average weight is from $\frac{1}{2}$ to 3 lbs. and the length is about 8 to 12 inches. The powerful beak is used only to tear open the fish and not to catch it. Although the bird feeds mostly on fish, it does not appear to be a very destructive one.

GREY HERON

Gujerati Name—Kabūt

Ardea cinerea LINNAEUS

See Coloured Plate 8.

SIZE. About that of the Openbill.

IDENTIFICATION. A large ash-grey Heron with a long black crest and a black stripe running from over the eyes to the nape. Face, whitish; neck and breast, greyish-white with black streaks; rest of body, grey; wings, darker. Eyes, yellow; bill, horny-yellow or greenish-yellow and tipped black, but sometimes dull orange on lower-mandible; legs, green to dark green with yellow patches at the joints. In breeding plumage, the bird assumes long feathers on the breast. Grey Herons are normally seen solitary in reed-beds, at the waterside, and on lakes, streams, rivers and the seashore. Near habitation, they are not shy and will allow fairly close approach. When at rest, the long neck is drawn in, giving the bird a shorter appearance. When flushed, it sometimes emits a loud *ghānk*. In flight, the white patch on the edge of the fore-wing is visible which is reminiscent of that of the Reef Heron. Sexes alike.

NOTES. Grey Herons fly long distances in search of food and alight even at the smallest water holes and streams where food is suspected. They are early risers, leaving their roosts before sunrise and travelling across hills and plains to reach their feeding grounds. The slow, continuous, flapping flight is unmistakable, even at a distance, as the bird flies with the neck drawn in and changing its course but slightly.

Owing to its capacity to fly high up in the sky when pursued by trained Falcons, the Heron has provided sport since times immemorial to all those who enjoy falconry. The Peregrine is trained to capture it and the ringing flights of the pursuer and the pursued to surmount each other are most exciting to watch. Even when the Falcon manages to reach above its quarry, the battle is by no means over, for the Heron evades every swift swoop and emits its characteristic loud *ghānk* to frighten its adversary in which, at times, it succeeds, leaving the intimidated Falcon behind. It, then, flees for safety. However, the Heron does not always succeed in this ruse and a well-timed and accurate swoop brings both the Heron and the Falcon down to earth in what seems a rolling mass of wing

and body. On the ground, it would seem that the Heron might use its sharp dagger-like bill to spear the Falcon but, strangely, this does not happen, and the Falcon invariably severs the Heron's neck with her sharp hooked bill to put an end to the struggle. If the Heron has a full crop, it often disgorges the food in the air as soon as it realises that it is being pursued by a Falcon, in an attempt to lighten its burden in order to escape. If very hotly pursued and not too far from water and reeds, the bird immediately seeks refuge, but here again, with a courageous Falcon, the chances of its escape are slender. It is very rarely attacked by wild Birds of Prey. Unlike the Purple Heron, this bird ventures into open country and does not skulk in tall reeds as much as the former. In size, it is larger than the Purple Heron, and individuals vary in colour from light to dark. The Grey Heron is not rare, and many may be seen scattered over the countryside during the Winter months. They are numerous along the sea coast at this time of the year. A Grey Heron occupying a large rock on the seashore or lakeside, or a bird wading in shallow stream close to reeds, is a common sight. While at rest, it is often found sitting amidst a group of smaller Herons on the seashore, its larger size immediately identifying it from the rest. Except for the breeding season, these birds are not seen in pairs and are entirely individualistic in their behaviour.

DISTRIBUTION. The whole of India and Saurashtra. Resident and local migrant; well distributed. Outside India it is found in Europe and most parts of Asia.

NESTING. Season—May to September. The nests found by me were generally placed on thorny Babul and Bunyan trees. They are made of sticks, much like those of Purple Herons. Although Grey Herons are commonly seen during the Winter months, only a few breed in Saurashtra and that, too, only in remote areas. The eggs number three to four and are bluish-green and lighter than those of the Purple Heron. I have seldom seen a breeding colony of these birds.

FOOD. Grey Herons are very pugnacious on their feeding grounds, never allowing others of their kind to trespass. This behaviour is frequently observed on the seashore when two Herons are trying to encroach upon one another's territory. A fight may ensue but not for long, for the stronger will soon drive away the weaker; the typical harsh *ghānk* is often heard as they face each other. Curiously, while the Grey Heron does not tolerate others of its own species on its feeding territory, it does not object the presence of smaller Herons. The food mainly consists of fish, frogs, mud-gobies, crustacea, molluscs and insects from the water. In its feeding habits, it is similar to the Purple Heron, but while the latter restricts itself more to freshwater ponds and reedy river beds, this bird is found much more often on the seashore and lakes, often away from reeds, and in open country lacking any cover.

While fishing, the movements are always slow until the final action which is a sharp thrust of the neck and bill when the prey is caught or speared. On the seashore, a bird may occasionally be seen trying to chase a mud-goby in an attempt to catch it. Much of its feeding is done when the tide is going out or coming in.

PURPLE HERON

Gujerati Name—Nāḍi

Ardea purpurea LINNAEUS

See Coloured Plate 14.

SIZE. Slightly smaller than the Grey Heron.

IDENTIFICATION. A large slender-necked Heron of a coppery-brown and dark purple-grey colour. The body is dark ash-grey with a purple shade on the wings. The compressed head is slightly longer than the bill which is sharply pointed. There are three distinct stripes on the head and neck: rich chestnut-brown, black and white respectively. The breast is chestnut-brown with grey and black feathers, and the wings and the tail are slate-grey, seen clearly in flight. The eyes are yellow or green, the facial skin is green or yellowish-green, and the legs are greenish-yellow, sometimes brown with a reddish tinge. Birds in full plumage have a long black crest and long feathers mixed with grey, chestnut and black on the breast. Young birds are much more cinnamon-brown all over. This Heron is found in green reed-beds, a background with which it harmonises well. It is usually seen singly except during the breeding season. It affects lakes as well as rivers, streams, ponds, and the seaside. It is not very shy, placing much reliance upon its blending colouration, but once flushed, it flies to a fair distance, only to settle on some tree or amidst tall reeds. In town and rural areas, it allows close approach. Its movements are rather slow except when catching its prey. Sexes alike.

NOTES. As already mentioned, the birds prefer thick reed-beds, and also trees, particularly those standing in or close to water where they roost. The flight is a slow flapping one with the neck drawn in and the legs outstretched behind the short tail. It is only when hotly pursued by a Bird of Prey, or when about to alight, that the neck is outstretched. On the whole, the Purple Heron is a silent bird unlike the Grey Heron, and, if ever, emits a loud *ghānk*. Even when caught by a trained Falcon, it does not seem to give fight. Instead of ringing up like the Grey Heron when pursued, it seeks the immediate refuge of reed-beds and water. Eagles sometimes succeed in capturing it.

Tall reed-beds standing in perennial waters is where the student should look for it at any time of the season, whereas during or after the Monsoon any patch of reeds may contain some birds.

DISTRIBUTION. The whole of India and Saurashtra. Resident and well distributed. Its range outside India extends to Indonesia.

NESTING. Season—April to October, most birds laying between April and August. They nest either on trees or in tall reed-beds. On trees, they make a nest of sticks, rather small for the size of the bird. It is placed either high up or as low down as a few inches above water but in midst of vegetation. Trees standing in water are, of course, preferred as they give a certain amount of safety to the birds. I have found many nests on a thick network of creepers clinging to trees situated in water. In reed-beds, the birds also nest in scattered colonies. River-beds covered with extensive reeds are likely places to look for nests, especially in more open country. The eggs number three to five and are bluish-green in colour and, on the whole, brighter than those of other Herons. Although the nests are not far from each other, it is rather doubtful whether a mere group of nesting birds can be termed a colony in the strictest sense. Solitary nests are also met with. An early rainfall may tend to make the birds breed earlier.

FOOD. Fish, tadpoles, frogs, mud-gobies and aquatic insects. While fishing, the birds move very slowly and, at times, they become immobile for quite a long time in awkward attitudes. They wait patiently for some prey to appear within striking distance of their pointed bill which is darted out with lightning speed, and the fish or whatever the prey may be is speared or caught up and then swallowed. They spend the early mornings and evenings fishing and, if undisturbed, will remain in the same area throughout the day. They prefer tall reeds where they can hide from the keen eyes of Eagles which, whenever possible, readily prey upon them.

INDIAN LITTLE GREEN HERON

Gujerati Name—Lili Bagli

Butorides striatus javanicus HORSFIELD

See Coloured Plate 7.

SIZE. About the same as the Pond Heron.

IDENTIFICATION. A small greenish-grey Heron with a long black crest and a black streak followed by a white one just below the eyes; a small pale yellow patch is also seen behind the eye. Bill, black; legs, orange, sometimes

with a reddish tinge; facial skin, green. Upper-parts, mixed with dark greyish-black and having a bronze-green sheen; lower-parts and flanks, smoky-grey; wing-coverts, dark green and edged with narrow white lines; tail, mixed black and grey; primaries, black and contrasting well with the rest of the body when seen in flight. This Heron maintains a constant colour pattern during the breeding and non-breeding seasons. It is found on lakes, ponds, rivers and rocky coastline. It is usually seen singly. Sexes alike.

NOTES. In habits, it is a skulker and rather crepuscular, if not nocturnal. It is not abundant but cannot, at the same time, be considered rare. It keeps to thick foliage during the day, resorting to camouflage. When approached by Man, though it never permits very close approach, it flies low along the water's edge and alights only some distance away, often to be flushed again and again. Amidst thick vegetation, it is almost impossible to see the bird as it matches the background perfectly. Moreover, it normally shows up in poor light either before or after sunset. Its movements are slow, much like the Pond Heron's, and it seems to be fairly silent. On the coast, I have often flushed it during the day from caves.

DISTRIBUTION. The whole of India and Saurashtra. Resident and uncommon. Outside India its range extends to China.

NESTING. Season—June to September. It nests in thick cover near water and lays bluish-green eggs. I have not come across many nests of this bird as they are usually difficult to find.

FOOD. Fish, frogs, mud-gobies and aquatic insects.

INDIAN POND HERON

Gujerati Name—Kāñi Bagli

Ardeola grayi SYKES

See Coloured Plate 7.

SIZE. Slightly smaller than the Cattle Egret.

IDENTIFICATION. In Winter plumage, this bird is khaki-coloured and striped with brown on the head, neck and breast. Lower-back, rump, wings, tail, chin and throat, white; side of face and breast, pale yellowish-buff; eyes, yellow; legs, yellowish-green to greenish-yellow; bill, horny-yellow and black-tipped, but with a blue base and bluish-green facial skin during the breeding season. At that time, the bird has a brown head and neck and assumes a long white crest, the chin to upper-breast being white; the upper-parts are dark maroon

and edged with buff. This change of colouration during the breeding season makes the Pond Heron look quite a different bird. Some are more yellowish-brown than others. This little Heron is common and rather sedentary in its habits. When flushed, its conspicuous white wing and rump feathers are visible, and it emits a croak-like sound which resembles the sound emitted by baby crocodiles soon after they emerge from the eggs. This immediately identifies the bird. Sexes alike.

NOTES. The Pond Heron is very common and may be seen on any small sheet of water. It haunts streams, rivers, lakes and ponds, and also the sea coast where it is sometimes abundant. Even the smallest little garden pond may attract this bird, and it will sit patiently for hours in the hope of catching some fish or other prey as it rises to the surface. When walking, it slowly creeps and camouflages extremely well against a background of aquatic plants and stones, but the small white patch on its wing-coverts tends to betray it; but for this, the bird seems invisible, even at close quarters. Although it cannot be called shy, it does not tolerate continuous gaze except from a distance. When disturbed, it alights on well-foliaged trees. It depends much upon its blending colouration and only takes wing if closely approached. The neck can be stretched to an incredible length, but normally it is kept drawn in and the bird appears squat. During the Summer months, when small lakes are drying, many birds may be seen together, and this is the time when they are in their breeding plumage. In Winter, too, they are found together on streams, mixing with other Herons and Waders. But they do not fly in flocks like Egrets and Reef Herons. On the coast, I have seen many birds scattered all over the mud-flats. I have always considered them individualistic in behaviour except during the breeding season when many breed in colony. They are preyed upon by Hawks, Falcons and Eagles, and an occasional large snake takes its toll.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common. Outside India it is found from the Persian Gulf to Indonesia.

NESTING. Season—May to October. Some birds breed just before the rains, others after. They nest in small colonies, often mixing with Egrets and Herons which are nesting at the same time. The nest is made of sticks and is rather a flimsy one. It is placed on leafy as well as leafless trees, high or low down; the latter is the case when the tree selected is standing in water. Large trees in cities are much favoured as well as those close to tanks. The birds squawk at their nesting sites frequently. Three to five bluish-green eggs are laid. Both parents take great care of the young. Crows seem to be their worst enemies.

FOOD. Fish, frogs, mud-gobies and aquatic insects. The Pond Heron is not a very active feeder, depending much upon its blending colouration and

immobility, and hence takes its prey entirely by surprise. Of course, this is the general method adopted by most Herons; yet this species seems to reach the height of patience and somewhat reminds me of the feeding habits of the Little Green Heron and the Purple Heron, the former, of course, being much more crepuscular and nocturnal; in contrast, the Pond Heron may be seen fishing in the baking hot sun at mid-day, waiting patiently for its food. A sudden thrust of the long bill, and the food is captured. The birds are seen in various odd poses, standing in half crouched fashion for hours together and moving but little unless disturbed. 'Dhobi ghats,' shallow lakes and streams having aquatic plants are the best places to study them.

CATTLE EGRET

Gujerati Name—Dhor Baglō

Bubulcus ibis coromandus BODDAERT

See Coloured Plate 14.

SIZE. Same as the Little Egret.

IDENTIFICATION. This is our commonest Egret which may be seen anywhere, sometimes in fairly large numbers. Its association with cattle and farmland is well known. The bird is white all over in non-breeding dress. During the breeding season, however, it assumes long feathers on its crown, neck and back which are a rich buffy-orange or cinnamon. Those on the back extend to or beyond the tail. The eyes often become red but are usually yellow; the bill, which is yellow in all birds, is reddish or tipped red in the breeding season. The facial skin is greenish-yellow and the legs and feet are black or grey with yellow soles, becoming reddish or yellowish in the breeding season. Young birds are all white with yellow bills and eyes. These Egrets are seen either in flocks or in pairs or solitary, but usually in flocks. The flight is medium-fast and a flapping one. Sexes alike.

NOTES. The Cattle Egret permits fairly close approach and is quite tame. This can be seen in the countryside when farmers are watering their vegetables or crops, for the birds gather round the peasant, almost right under his feet. They come to catch insects disturbed by the flowing water. In the early morning, one may see flocks of these Egrets flying towards the open country where they seek food and settle close to where cattle, sheep or goats are grazing. As the cattle graze, insect life is put up and many pests which surround the cattle are quickly caught and eaten. At the waterside, the birds settle on the backs or heads of buffaloes if the animals are partially submerged in water. I have often seen them in stables, allowing very close approach. They generally

roost on tall trees in or on the outskirts of towns and villages. The flight is usually, though not always, straight, and a passing flock gives the impression of clean handkerchiefs waving in the air. This Egret can withstand intense heat, and if carefully marked, it is possible to see a bird with the throat throbbing due to rapid breathing. It has a timid nature which is evident when the trained small Red-headed Merlin pursues it. No sooner does the Egret realise that it is being followed than it immediately seeks the nearest refuge it can find; it commonly gets in between the legs of cattle or goats, etc. I have even seen it take refuge under a motor car or attempt to get in between the wheels of a cyclist who was riding past. Although well-equipped with a sharp bill, the bird seldom uses it in defence. It is surprising at times how quickly it gives up all hopes of escape. In open country, it is regularly preyed upon by Peregrines and Laggar Falcons. The bird emits a sort of grunt, reminiscent of that of a female blackbuck.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common. Its range outside India extends to China.

NESTING. Season—June to October. The bird nests in colony, making a nest of sticks. Tall trees are preferred. The sticks selected for making the nests are often brought from long distances and the same nests are generally used year after year, being reconstructed each time. During the Monsoon the nests are made foul by the excreta mixing with rainwater, and a colony can be smelt from a long distance. Three to four eggs of a pale bluish colour are laid. Most birds lay after the rains have commenced and they readily mix with other species of Herons. Evergreen trees in large cities are favourite roosts and nesting places, occupied year after year. Cattle Egrets emit guttural squawks, at the same time raising their crest and plumes much in the same way as other Herons.

FOOD. Chiefly insects and worms but fish, frogs, lizards and mice are also eaten. The birds seem to be very beneficial as they destroy pests from fields and 'wādis' and reduce flies which affect cattle. The usual method of catching their prey is by stealthily approaching an insect until at striking distance and, then, catching it with a quick thrust before it has time to escape. Often the birds follow grasshoppers which have been flushed until they resetttle. At times, they are seen jumping up in the air to catch a flying insect which has been flushed by cattle. Their lunging thrusts to catch insects on the ground are well-aimed. Grasslands, marshes, fields, scrub jungles, forests and practically all the other types of ground are covered in search of food. They are also found feeding by the waterside, but seem to prefer the proximity of cattle and cultivation more than anything else. As already mentioned, the Cattle Egret is a true friend of the farmer, ridding him of many insect pests. It flies to its feeding grounds in the early morning and returns late in the evening.

EASTERN LARGE EGRET

Gujerati Name—Motō Saféd Baglō

Egretta alba modesta J. E. GRAY

SIZE. About that of the Purple Heron.

IDENTIFICATION. This is the largest of our white Egrets, and is pure white throughout. Eyes, yellow; facial skin, bluish-green; bill, black, with a yellow base which becomes much paler in the breeding season; legs, black; part of tibia and tarsus, pale yellow. The bird has no crest or breast tassels but assumes long feathers on the back which extend over the tail during the breeding season. It is normally seen solitary but gathers in groups during the breeding season. It is found on the seashore, lakes and ponds. It is difficult to distinguish from the following species in the field except when in breeding plumage. The wing measurements are over 354 mm., normally 375 mm., but the measurements of the young birds overlap with those of the next species according to Mr. Sálím Ali. Sexes alike.

NOTES. Like the Grey Heron, this bird generally keeps aloof from its own kind though it readily mixes with other species. Where food is concentrated at one place, however, a number of birds may be seen together, but less so than the following species. In flight, it is a typical Heron. It emits a loud *grōnk* and a *ghānk*, much like the Grey Heron.

DISTRIBUTION. The whole of India and Saurashtra. Fairly common and resident. It has a wide distribution outside India extending upto Japan and Australia.

NESTING. Season—June to October. The nest is a platform of sticks placed on a tree or, rarely, in reed-beds. The birds nest with other Egrets, sometimes in small colonies. Three bluish-green eggs are laid.

FOOD. Same as the other Egrets.

INDIAN SMALLER EGRET

Gujerati Name—Būlā

Egretta intermedia intermedia WAGLER

SIZE. Slightly smaller than the last.

IDENTIFICATION. Very similar to the last species, but distinguished in the breeding season by the presence of the breast plumes. When these are shed, however, it is difficult to separate the two in the field. There is no crest. Although this Egret is smaller in wing measurements which range from 304 to 354 mm., this is hardly noticeable in the field. It is larger in size than the Little Egret. The call is a drawn out *krrāā* or *karr*, often emitted as the bird flies. It is found solitary as well as in flocks all over the countryside. Sexes alike.

NOTES. These birds congregate in larger numbers than the last species where food is abundant. They keep to marshy grounds but may be encountered in wet grasslands as well. Falconers have succeeded in training the small Red-headed Merlin to capture this Egret but it does not afford the same ringing flights as the Grey Heron. When hard pressed, it emits its call to frighten the pursuer.

DISTRIBUTION. Throughout India and the East, and fairly common and resident in Saurashtra.

NESTING. Season—June to October. The nest is of the usual Egret type and the birds may be found breeding with other Herons, Storks, Egrets or Cormorants. Small colonies are also found. Four bluish eggs form the normal clutch.

FOOD. Much the same as the last species, but, perhaps, the birds feed more upon insects, and, sometimes, assemble in larger numbers; otherwise, they are solitary. On the coast, I have seen them following on the wing a shoal of fish in a creek and picking them up. This method of fishing seems rather unusual. To see a bird wading in marshy ground with its long neck outstretched and waiting for some fish or frog to rise is common. It is not an active feeder like the Little Egret with which it may, at times, be confused.

INDIAN REEF HERON

Gujerati Name—Dariāi Baglō

Egretta gularis Bosc

See Coloured Plate 14.

SIZE. About that of the Smaller Egret.

IDENTIFICATION. The species is dimorphic and is seen in two common colour phases, one a pure white and the other a dark slate-grey, almost blackish, with a white chin and throat. I have also seen pale bluish-grey birds.* An intermediate phase is a mixed grey and white one. The reason for these phases is not quite clear, for they do not depend on age or sex, and one may find a white bird pairing with a slate-grey one. The bird has a crest and lanceolate feathers on the breast and upper tail-coverts which distinguish it from the Cattle Egret. Some grey birds I saw had a tuft of feathers on the head. The plumes of the crest and breast are, however, shed after the breeding season. The Cattle Egret is at all times recognised by its yellow bill. The resemblance between the Little Egret and the white variety of Reef Heron is very close as both have yellow feet; the latter, however, has a horny or dull orange bill or a yellow-tipped one while the former has a thin black bill. The legs and the bill of the Reef Heron get muddy on the seaside; this makes identification between the two species difficult. Moreover, both are found on the same feeding grounds. In Winter, when the plumes are shed in most of Egrets, the colour and size of the bill and legs taken together seem to aid a good deal in recognising these birds. Legs, greenish-yellow to black, but yellowish-green in white birds; joints, greenish-yellow in black-legged birds; feet, yellow; eyes, yellow; bill, horny-brown; lower-mandible, pale yellow. The Reef Heron is a typical coastal bird and is met with on the seashore. As its name implies, it prefers reefs but it is found all along the sea coast. I have frequently seen it up-stream and on rivers and lakes many miles inland, but there it is not so abundant.

NOTES. A group of these birds hunched up and resting on some outcropping of rocks while the tide is high is a common sight. On the rocks, the slate-grey birds merge with their background while the white ones show up conspicuously from a distance. Proportionately, the whiter variety appears to be less in number than the darker one. The student can hardly believe the two varieties constitute the same species. At ebb time or when the tide is coming in or going out, the birds scatter across the mud-flats or the sand as they feed, and there is much squawking when two birds reach for the same food. But for this, they are

* These generally denote juvenile birds.

silent. They may be seen roosting in trees in cities and villages situated not very far from the sea coast, and yet many birds are found well inland. While flying, a white spot on the fore-wing is visible in the darker birds.

DISTRIBUTION. The Western Coast of India including the entire Saurashtra Coast to the Persian Gulf.

NESTING. Season—May to August. The birds make a nest of sticks on trees. Mangrove trees close to tidal creeks are generally selected, but any tall tree in or on the outskirts of a city or village may also be chosen for nesting. Three to four bluish eggs, darker than those of the Cattle Egret, are laid. These birds nest in colony and mix with other kinds of Herons.

FOOD. Mud-gobies, fish, crabs, other marine life and aquatic insects. The birds are fairly active at times, chasing fish in shallow water or slime. But many patiently wait on banks for hours, watching out for food. Their favourite feeding grounds are the extensive mud-flats when the tide is low. Small salt-water pools and puddles are regularly visited. Sometimes the entire mud-flat is scattered with these birds as they feed or wait for their prey. In their feeding behaviour, they resemble the Little Egret but creep about the mud-flats more frequently, emitting squawks as they meet more of their kind. A typical scene on the Eastern Saurashtra sea-board is a group of these birds mixed with Large and Small Egrets, Grey Herons, Painted Storks, Spoonbills, White Ibises and a pair of Black-necked Storks, with Gull-billed Terns swooping down upon prey in a basin of shallow water and ooze which have been retained by a low wall of stones made by fishermen in order to trap fish. There is much competition and squawking as birds try to collect food before it escapes to the sea. The Reef Heron is also found on freshwater lakes while feeding.

LITTLE EGRET

Gujerati Name—Kilichio

Egretta garzetta garzetta LINNAEUS

See Coloured Plate 14.

SIZE. About that of a village Hen, with longer legs and neck.

IDENTIFICATION. This is a pure white Egret with a long crest which sometimes appears like a tuft of fluffy feathers. Like *E. intermedia*, it also has long plumes on the breast and above the tail which are discarded soon after the breeding season is over; some, however, remain on the breast. Eyes, yellow; bill, black; facial skin, greenish-yellow; legs, black, but joints and feet, yellow. This Little Egret is often seen solitary on streams, rivers, lakes, marshes, and ponds. It is also found on the seaside with other Herons. While hunting,

it seems to be fairly active at times. In size, it is smaller than the last two species. It is distinguished from the white variety of the Reef Heron to which it bears some resemblance by its thinner black bill. Sexes alike.

NOTES. These Egrets are fairly confiding birds, allowing fairly close approach. I have seen them mixing with Cattle Egrets but, on the whole, they are much more of waterside birds. They are silent birds except in the breeding season when they utter croak-like sounds, and at their nests a colony becomes rather noisy. The Little Egret is not normally found in flocks except at the breeding colony. It seems to prefer the small, shallow streams where it does most of its fishing. It waits patiently as do most Egrets and Herons. Both this as well as other Egrets were at one time persecuted for their beautiful plumes which were exported under the name of 'Osprey feathers' to adorn ladies' hats. They were also used for 'seer péches' fixed on Indian Princes' 'sāfās' when worn on ceremonial occasions. Today, the bird is protected under the Wild Life legislation. When the feather trade was in existence, Egrets were farmed and the plumes extracted.

DISTRIBUTION. Throughout India and Saurashtra. Fairly common and resident. Also found in Europe, Africa and the Far East.

NESTING. Season—April to October, particularly between June and September. Little Egrets nest in small colonies on tall trees standing in water; they mix with other species, *e.g.*, Herons, Spoonbills and Cormorants. The nest is made of sticks and resembles that of a Crow, but it is not so deep or well-made. These birds nest in the same trees for years if conditions are favourable. They make the nests very dirty from where a foul smell emanates, especially when the rains have commenced. They emit a guttural call and are fairly noisy, fighting other birds which invade their nests. Three to four, and rarely five, bluish-green eggs are laid. Young birds not quite able to fly often fall to the ground or into the water and get killed by predators. Eagles prey upon the young in the nest; for them nothing is easier than to deprive the parents of their young and I have often wondered why the whole colony does not get destroyed. At Nirmal Bundh, close to Jasdan, where a colony of birds was nesting on a clump of 'Babul' trees standing in water, I marked a crocodile which regularly came and took its position under the trees, waiting for young birds to fall into the water. Birds which had already fallen and had died in the water were also eaten. At this colony, I also saw a pair of Bonelli's Eagles taking their toll.

FOOD. Chiefly fish, but frogs and insects are also eaten. A characteristic scene is an Egret running now up, now down, in a fast flowing stream in an attempt to catch fish. In this respect, it much resembles the Reef Herons as both show the same characteristics while feeding. Also, they wait for their prey for hours together.

NIGHT HERON

Gujerati Name—Awāk or Wāk

Nycticorax nycticorax nycticorax LINNAEUS

See Coloured Plate 8.

SIZE. Larger than the Pond Heron.

IDENTIFICATION. A grey bird with black crown, crest, back and scapulars which look greenish when seen in sunlight. During the breeding season, it is easily recognised by a few slender white feathers on the hind-crown; the lower-parts including the cheeks are white to creamy-white, the flanks are white mixed with grey, the bill is greenish-yellow to black, the legs are greenish-yellow to yellow, and the eyes are blood-red. Young birds have yellowish-green facial skin; on the upper-parts, they are light khaki-brown mixed with white and striped on the breast, much like the Winter plumage of the Pond Heron. The Night Heron, as its name signifies, is a nocturnal bird and is seen flying after sunset and returning to its roost before sunrise. It is easily recognised by its call which it emits while flying and from which it gets its Indian name 'Awāk' or 'Wāk'. During daytime, it is found amidst green trees in cities and villages or close to water where it passively rests throughout the day. Sexes alike.

NOTES. It is common to find Night Herons flying after sunset and now and then emitting their characteristic calls. When flushed from their roosts amongst trees during the day, they fly in all directions, calling out in their typical manner. While flying, they appear compact, the wing-beats being fairly fast as they circle, but they do not remain in the air for long and alight after a short while. As a rule, they are sluggish during the day and even at night. They may be found on the sea coast, at lakesides, and along rivers and streams.

DISTRIBUTION. From Southern Europe and North Africa to South-Eastern Asia. The whole of India and Saurashtra.

NESTING. Season—June to September. Stick-nests of a flimsy nature are made on trees, preferably those standing in water. These nests are sometimes found very low. They are small compared to the size of the bird. The birds nest in small colonies. They can withstand heavy rains and it is interesting to notice the drops falling off their feathers which appear to be rain-proof, having a waxy texture. The eggs usually number five and are of greenish-blue colour.

FOOD. Chiefly fish, frogs and aquatic insects. The birds are nocturnal feeders, but on cloudy or rainy days during the Monsoon I have seen them feeding in the morning, afternoon and evening. They travel great distances in search of food and return to their favourite roosts before sunrise. While feeding, they seem to crouch, and wade into water to a certain extent.

CHESTNUT BITTERN

Gujerati Name—Sūrangi Pān Bagli

Ixobrychus cinnamomeus GMELIN

See Coloured Plate 7.

SIZE. Same as the Pond Heron.

IDENTIFICATION. A cinnamon-brown coloured Heron-like bird whose breast is chestnut and the sides are black; the lower-parts have a slight greyish tinge and there is some grey on the crown and the secondaries. The female differs in having a blackish crown, but a central black streak on the neck is seen in both sexes. The young birds resemble the female but are less bright and are barred on the upper plumage, while the lower plumage is streaked with brown. In the adult, the eyes vary from yellow to orange-red, the bill is dull yellow, and the orbital skin is purplish-red in males and yellow in females during the breeding season. The bird is seen in reedy swamps during the Monsoon.

NOTES. This Bittern is very seldom observed during the day as it keeps to thick reed-beds and is very reluctant to fly. It seems to be a local migrant, coming to breed during the Monsoon, and it is fairly rare in our parts of the country. At night, it keeps to well-watered areas and canals where it may be seen after sunset, but very rarely in flight except during heavy rains.

DISTRIBUTION. India to China. Rare in Saurashtra as a Monsoon visitor.

NESTING. Season—June to September. The nest is built amongst reeds in a swamp, and about four to five white eggs are laid but, as is the case with those of the Grebe, they become stained.

FOOD. Same as Herons, generally.

BITTERN

Gujerati Name—Pardéshi Pān Baglō

Botaurus stellaris stellaris LINNAEUS

SIZE. Larger than the Night Heron.

IDENTIFICATION. A yellow-brown Heron-like bird with a black crest. The breast is barred black, and a black stripe is seen below the eyes. Tail, short and barred with ten feathers; upper-parts, striped and barred with blackish markings and having much of buff on the wing-coverts; lower-parts, yellowish-buff with

wavy brownish-black markings; eyes, pale yellow; bill, dark greenish-yellow and tipped with black; legs, dark green to pale green. Owing to its nocturnal habits, concealing colouration, and preference to remain in tall reed-beds, the Bittern is very seldom seen except when flushed during a Snipe or Duck shoot. Sexes alike.

NOTES. Fairly rare with us and only seen if reed-beds are beaten systematically by a line of beaters. It is a fairly big bird and cannot be mistaken, its general colour and design resembling those of a female Florican with the head and neck very much more thickly feathered and Heron-like.

DISTRIBUTION. Europe and Asia upto Japan; migrating southwards during Winter into India including Kutch and Gujerat. Rare in Saurashtra.

FOOD. Much like that of Herons.

WHITE IBIS

Gujerati Name—Dhoḷi Kāṇkaṇasār

Threskiornis melanocephalus LATHAM

SIZE. About that of a large domestic Hen.

IDENTIFICATION. A white Egret-like bird with a long downward curved bill, similar in appearance to that of the common Black Ibis but thicker and longer. The head and neck are black and featherless. A fringe of white feathers at the base of the neck appears at times like a muffler when erected. The rest of the body plumage is mostly white except for some flight feathers which have black tips. The legs are black. In breeding plumage, the feathers of the inner secondaries and the longest scapulars are slate-grey and the under wing-coverts are blood-red. The eyes are brownish-red. The young have short brown feathers on the head. Sexes alike.

NOTES. The White Ibis is seen mostly on the coastal belt and riversides. It is more of a marsh bird like the Egret. It is usually found in groups of 3 to 20 birds, though one may casually come across a solitary one. I have seen them along the seashore on mud-flats, lakes, rivers and creeks. They are silent birds, unlike the Black Ibis, and have a slower flight. On the coast they may be seen flying in single file or in a V-formation. They fall an easier prey to Falcons than the Black Ibis.

DISTRIBUTION. India to Japan. Saurashtra, Kutch and Gujerat. Resident and not uncommon.

NESTING. Season—June to October. The birds nest in small colonies or mixed with Storks and Egrets. Some birds, however, nest solitarily. Three bluish-white eggs are laid.

FOOD. Worms, frogs, fish, crustaceans, molluscs, insects and mud-gobies. The White Ibis feeds in muddy as well as clear waters, in streams and on the seashore. It is found on lakes, large or small, where there are plenty of trees on which it perches readily after feeding and at night. It seems to prefer the small, dirty water-holes and streams having green aquatic plants. Sewage canals and small dirty ponds near villages are the places where I have seen it most.

INDIAN BLACK IBIS

Gujerati Name—Kāḷī Kāṅkaṇasār

Pseudibis papillosa TEMMINCK

See Coloured Plate 7.

SIZE. Slightly smaller than the White Ibis.

IDENTIFICATION. In shape, the bird resembles the last species. From ■ distance, it appears black. It has a long downward curved bill. A conspicuous white patch on the fore-wing readily identifies it, especially when it is flying. The legs are reddish to pinkish-red; the upper-parts, when closely seen, appear steel-blue and black; the eyes are orange-red to brown. A red patch on the head consists of very small warts. The red on the bare head is obsolete in young birds which are browner. Sexes alike.

NOTES. This Ibis is a common bird; it is found near rubbish heaps and refuse dumps. It also visits open fields, the seashore, rivers, streams and lakes. The moderately long legs are well-adapted for wading and walking, though it is seldom seen wading except when drinking or feeding in muddy holes. It is not a shy bird, being generally seen close to towns and villages. It roosts on large tall trees amongst habitation and plantation, and its strident call, reminiscent of the sound caused by a rope pulled over the pulley to draw water from a well, may be heard in the early morning or evening. Actually this Ibis has two or three calls, one of which is a loud *krānk*, expressing fright. I have seen it roosting on trees next to a large Railway station in spite of the noise of the traffic. In flight, the wings are held back from the shoulder tips and the strokes appear slow. However, the birds can accelerate their speed with fast flappings when frightened. A pair, or a small group, may, at times, be seen soaring in circles at mid-day, sunning itself. Owing to their capacity to mount rapidly into the sky, falconers since olden days have trained Falcons to pursue them. A quick method for escape from Falcons is to mount up high in the sky as rapidly as

possible. The birds do that remarkably well and also out-fly Falcons by sheer speed. If this method fails, the pursued bird separates itself from the flock and seeks cover in vegetation or water. The Ibis is seen in groups of 3 to 5 or in flocks of 10 to 20. It is, however, not rare to encounter a single bird. While in flight, it has a habit of gliding after flapping and, owing to this, the bird can be identified from a great distance. When a chain of birds are seen flying, the discontinuity of flapping is clearly noticeable. They often fly in a V-formation, or in a single file which always appears wavy from a distance. Some sportsmen consider this bird good eating, but I do not recommend it not only because it spends most of its time in dumps of night soil but the flesh is rather dry and stringy.

DISTRIBUTION. Most parts of India including Kutch and Gujerat and the whole of Saurashtra. Common and resident.

NESTING. Season—March to September. The nest is made of sticks and is placed fairly high up on a tree. Plantations of cocoanut palm and clumps of tall trees are favourite sites. Two to three eggs are laid; they are bluish with brownish markings. During the breeding season the birds are noisy. I have not found them nesting in colony but on separate trees. Those that nest on palms often make use of the nests of Vultures and Kites. The harsh calls of nesting birds, heard before dawn, are often very irritating to those sleeping closeby.

FOOD. Insects, reptiles, grain and rubbish. The birds leave their roosts before sunrise, and sometimes go as far as 30 miles for feeding. After feeding, they return to rivers or lakes to water and go out again to feed in the evening, only to return to their roosts after doing so. I have often seen this Ibis following herds of goats and sheep in search of insect life. It is much more of a dry land feeder, being found feeding well away from water. It also enters 'wadis' to feed in and rids cultivators of pests. Also, it readily enters cabbage fields and devours the grubs which are harmful. Hence this bird is, on the whole, beneficial.

GLOSSY IBIS

Gujerati Name—Pān Kāṇkaṇasār

Plegadis falcinellus falcinellus LINNAEUS

See Coloured Plate 7.

SIZE. About that of a domestic Hen.

IDENTIFICATION. Very similar to the Black Ibis but smaller and slimmer. It is of uniform colour and without the white on the fore-wing and the red on the head. The bird has a glossy appearance in which a warm chestnut-brown colour, mixed with bluish-green, is sometimes seen in bright sunlight. The

head is feathered but the face is naked. The feet are brown. In flight, the wings appear blackish in contrast to the body. Sexes alike.

NOTES. The Glossy Ibis is not commonly seen except during Winter, and even then it is rare in many districts. It is always found near water, in some reedy spot on the side of a lake or pond. When disturbed, it reluctantly leaves water and rises above it in circles. These birds are seen in pairs or small groups of 8 to 15. With us they seem to be locally migratory and are seldom met with. One may suddenly come upon them in reedy lakes at odd times of the year, generally between November and June. However, February to March is the best time to watch out for them. In flight the Glossy Ibis is more active than the last species and can tax the powers of the fastest Falcons while spiralling. When hard pressed, it shoots down to the water like a Cormorant and takes refuge amongst reeds. I have found it a silent bird.

DISTRIBUTION. Southern Europe, Africa and Persia to India including Kutch, Gujerat and Saurashtra. Resident in some parts of India, but I have not found it breeding in Saurashtra though some birds may do so. Uncommon.

NESTING. It is known to breed from April to June and nests with other Water Birds on trees, building a stick nest. The eggs number three to five and are deep blue in colour.

FOOD. Aquatic insect life and molluscs. It prefers reedy waters to feed in.

INDIAN SPOONBILL

Gujerati Name—Chamehō

Platalea leucorodia major TEMMINCK AND SCHLEGEL

See Coloured Plate 8.

SIZE. Rather larger than the domestic Duck.

IDENTIFICATION. An entirely white bird with black feet and bill. The bill is long, flattened and broad, and has a circular tip which has given the Spoonbill its name. In breeding plumage, the upper-breast and lower-neck are cinnamon. On the head is a tuft of feathers which, in full plumage, becomes a crest. The broad bill is often striped transversely with bluish-grey except at the tip which is yellow. The throat has a bright yellow bare skin with saffron-red edges to it. The eyes are blood-red, the quills are tipped black and the feet are black. In non-breeding plumage, the bird appears all white with blackish bill and legs. Sexes alike.

NOTES. Spoonbills are commonly seen either singly or in small flocks, often mixing with large Storks and Egrets while feeding. They gather near muddy pools, rivers and tidal creeks. They are also found at the shallow ends of lakes. In the countryside, they are not shy and will tolerate village folk, but any strange dress will scare them even from a distance. They have a rapid and powerful flight, unlike the slow wing-beats of Egrets and Herons. They are not as common as Egrets; at the same time, they cannot be said to be rare. They roost on large trees close to villages and cities. While going to their feeding ground or returning to their roost, they fly in a V-formation; this characteristic of flight, along with a more rapid wing-beat and an occasional glide, can easily distinguish them from a distance. The long neck and legs are kept outstretched while flying, making the wings appear short.

DISTRIBUTION. The whole of India including Saurashtra, Kutch and Gujerat. Resident and Common.

NESTING. Season—June to October. The Spoonbill breeds on large trees, and one may often see a small colony of half a dozen birds nesting together. They nest on trees either situated in cities or villages, or standing in water. The nest is made of sticks and is fairly large; it is, at an average, situated at a height of over 12 feet. Three to five oval-shaped eggs are laid which are dirty white, and often spotted with small brown spots. However, some are entirely white. The young emit a shrill whispering note, like a *chirrurr*, which can be heard from a fair distance. When older, they imitate their parents and emit a soft whistling note as they beg for food. By the time the eggs hatch, the nest is well 'white-washed' with excreta, and a foul smell emanates therefrom.

FOOD. Fish, frogs, mud-gobies, eels, insects and some green food. The way in which the birds feed is interesting: the bill is dipped in mud or slime, and moved from side to side at right angles to the body in a semi-circular motion. They feed on the muddy seashore, in small village ponds and on lake-sides, always preferring muddy to clear water. The birds readily wade in the water and, as a rule, feed together fairly actively, stopping to gobble their food as it reaches their bills. Solitary birds are also seen feeding. When suspicious, they erect their heads all together and become immobile, prepared to fly away instantly. They feed in company with Painted Storks, White Ibises and other Water Birds.

PAINTED STORK

Gujerati Name—Dhonk

Ibis leucocephalus leucocephalus PENNANT

See Coloured Plate 9.

SIZE. About that of the White Stork.

IDENTIFICATION. This is our commonest Stork. It is recognised by its long and slightly downward curved bill which varies in colour from pale to deep-yellow. The facial skin is yellow to bright orange in the breeding season. Legs, pale fleshy to pink in breeding season, often white-washed with excreta on the tibia; head and neck, pure white, often dirtied; upper-breast and back, white with a blackish dark green band mixed with white on the lower-breast, seen clearly from the front: this band is not always complete. Wing-coverts, mixed with black and white, and forming a striped pattern; primaries, black or glossy bottle-green; tail, black and banded white. In full breeding plumage, pink feathers are seen on the scapulars, greater wing-coverts and innermost secondaries which makes the bird look rather colourful. Young birds are suffused with brown without the black breast-band, and lack the bright colours of the adult. These Storks are seen wherever there is water containing food; nearly every village possessing a river or a pond will have them. Even the smallest and dirtiest water-holes attract them. And where food is easily available, they are seen in large flocks, from 10 to 50 birds together, either feeding or resting. Sexes alike.

NOTES. Painted Storks are normally seen in groups and one rarely comes upon a solitary bird. After having had a feed, they have a habit of spreading their wings while seated on their tarsi. They bask in the sun in open ploughed fields or barren land well away from the water, and I have seen them lying down on the ground, much like well-fed Vultures. One may even see them near a carcass where Vultures are feeding. This, of course, is very rare. Being large birds, they are never attacked by wild Birds of Prey. When attacked by a trained Falcon, however, they do not seem to show much fight but if the Falcon is caught in the razor-edged bill, it is doomed. The flight consists of heavy flappings with glides in between, much more frequent than that of the Cranes. These birds often soar high up to bask. When taking off, they lean well forward, often having to take a few quick steps before rising. The black flight feathers easily distinguish them from a distance.

DISTRIBUTION. The whole of India and Saurashtra. Resident and fairly common.

NESTING. Season—August to December. The birds usually nest in small colonies on large trees. The nest is neither very large nor well-built. It is made

of sticks, and for this purpose the birds often bring branches full of leaves from trees situated either closeby or at a distance. It may be situated in the middle of a group of large trees in or close to a village or on the outskirts of a city. 15 to 40 birds may be found nesting in a colony. Three to five longish eggs are laid; they are whitish in colour. I have found Painted Storks nesting more numerously on the coastal areas where marine food is easily available. The courtship behaviour on the nest is seen when the birds clatter their bills and raise their wings. Nestlings are white but become smoky-grey as they grow older. During the hot hours, the parent birds shade the nestlings, and most of the feeding is done either early in the morning or late in the evening or at night. The young wave their heads and utter a mewling sound when begging for food. Fledglings have brown upper-parts, getting darker on the head and neck; the lower-parts from the breast are buffy-white.

FOOD. Frogs, fish, crabs, mud-gobies, snakes, insects, rats and lizards. Any dead or living thing of the size of a rat fallen into water is promptly devoured. The method of feeding is by wading into water and keeping the bill partly open. The birds help each other by feeding together and exploring every nook and corner. In pools where there are small fish and where water is clear, they intentionally kick up the mud with their feet in order to make it muddy, thus often suffocating the fish which rise to the surface to be easily caught or strike against their open mandibles. They also flush aquatic life hidden at the bottom or under rocks and stones by deliberate movements of their feet; I have often witnessed these Storks intentionally moving one leg and then the other in a characteristic manner for this purpose. This method of flushing aquatic life is used by all Storks and Egrets and some Plovers. As a frog or fish is caught in the knife-edged bill, the bird, if close to land, moves towards it to guard against the prey escaping if dropped. It seems fairly intelligent in its method of feeding. Drying pools full of fish, insects and frogs are the rendezvous of these Storks. Those feeding in muddy water take long strides with their bills partly open until food is encountered, when a quick upward movement of the bill and head may be seen with a pause in the walk, and the food is gulped down. They allow close approach and disregard all traffic while feeding.

OPENBILL STORK

Gujerati Name—Gūgalā

Anastomus oscitans BODDAERT

See Coloured Plate 8.

SIZE. Small for a Stork; standing about $2\frac{1}{2}$ feet.

IDENTIFICATION. Recognised by its short knife-shaped greenish-grey bill, having an open space or slit when it is closed. In adult plumage, the bird has black wings and tail; the rest of the body is white. The eyes are grey, the legs are fleshy-red, and the orbital skin and lores are black. In non-breeding plumage and in younger birds, the white is replaced by the smoky-grey. The Openbill is seen on lakes and in coastal areas, either solitarily or in flocks. It is prone to local movements. Sexes alike.

NOTES. The smoky-grey plumage is the one usually encountered, and large flocks are seen on lakes in Winter or during the hot months. Black and white adult birds may be met with and the student should not mistake them for the White Stork to which they bear some resemblance from a distance. The smoky-grey birds often arrive, sometimes in large numbers (80 to 200 birds), when the lakes are drying and the freshwater mussels are easily available. Openbills are often wary birds and take alarm from a great distance which means that they have been persecuted. I believe most of our birds come from the mainland or the northern districts. They do not remain with us for more than a month or two, even if the food is available. They have a predilection for lakes. When frightened, the birds in large groups take flight one by one and are capable of soaring high.

DISTRIBUTION. The whole of India but uncommon in Saurashtra. Resident and local migrant. Most of our birds have been recorded from October to June in various parts of the State. The only colony so far found breeding with us was at Vardusar Lake not very far from Wankaner and reported to me by the Yuveraj of Jasdan. Outside India it has a wide distribution from Ceylon to China.

NESTING. The season, according to Mr. E. C. Stuart Baker, is principally July-August. The colony at Vardusar Lake had fledglings in the middle of October, indicating that the birds had nested during the Monsoon. Openbills often colonise with other birds, e.g., White Ibises, Painted Storks and Egrets. The nests are not very large.

FOOD. Same as other Storks, but the bird has a preference for molluscs.

WHITE STORK

Gujerati Name—Ūjaji

Ciconia ciconia LINNAEUS

See Coloured Plate 8.

SIZE. About that of a Vulture, standing nearly $3\frac{1}{2}$ ft.

IDENTIFICATION. In general appearance, this bird is a large white Stork with black wings, fleshy-red legs, red or brownish eyes and shortish dark red bill. In some birds, however, the bill is deep orange-red. It resembles the Openbill Stork in pattern, but the straight dusky-red bill and fleshy-red legs readily distinguish it. It inhabits marshy places such as jheels and tanks, and may also be seen on coastal areas during the Winter months. Sexes alike.

NOTES. I have seen these Storks either singly or in threes but I have also come across groups of 15 to 20 birds. I have also seen them on dry land, away from marshes and jheels. Occasionally, one may see them on the sea coast. At times they are shy, and at others permit close approach. I remember seeing a solitary bird which was feeding in a reedy patch close to where women were washing their clothes and I managed to reach within 20 yards of it. Eventually, a shepherd with his flock drove it away. On the whole, the birds are fairly rare and seem to be found more often in the flat marshy grounds between Wadhwan and Viramgam on the Gujerat border. They are also seen in Western and Eastern Saurashtra in open country, but always close to water. Sudden appearance of them may occur at any time during the cold months.

DISTRIBUTION. Breeding in Europe and Africa, and wintering through Syria to South Africa and India including Gujerat and Kutch. Fairly rare. Winter migrant into Saurashtra.

FOOD. Frogs, fish, worms and insects taken from and near water.

WHITE-NECKED STORK

Gujerati Name—Kāji Tūl

Ciconia episcopa BODDAERT

See Coloured Plate 8.

SIZE. Slightly smaller than the White Stork.

IDENTIFICATION. Recognised by its black wings and upper-parts, its long, white, feathery neck and its whitish face, the crown being black. Tail, shortish and white; bill, black, tipped with red; eyes, red; legs, dark red; tibia or upper-leg, often 'white-washed'. In sunlight, the wings disclose a coppery-bronze

and greenish-blue sheen. Young birds are browner and have paler legs. This Stork is never found in flocks and it is rare to see more than two pairs together. Like most Storks, it has a habit of sitting on its tarsi when resting. It prefers to feed in rivers, streams, small ponds, water-holes and sewage canals in open country, and it is also found in forested areas. It often visits dumps on the outskirts of towns and villages. On the whole, it seems to prefer open country and remote places. Sexes alike.

NOTES. In habits, the White-necked Stork is not so regular as other Storks, for today one may see it at one place and somewhere else tomorrow; yet some pairs I came across were regular in visiting the same area daily because food was plentiful at the time. However, in deciduous forests such as the Gir, it keeps regularly to the streams and drying water courses. Here it seems more alert and shyer. When attacked by trained Falcons, it does not seem to show much defence beyond emitting a fierce hissing note. But for this, it is quiet except for the few grunts which it utters during the breeding season. It flies lightly and rises with ease. It is not really as shy as it might appear to be, and I have often approached it closely while it was feeding.

DISTRIBUTION. Most parts of India including the whole of Saurashtra, Kutch and Gujerat. Resident and not uncommon. Nesting only where conditions are favourable. Outside India it is found from Africa to the East Indies.

NESTING. Season—May to October. The nests are built on tall trees and a few pairs may occasionally nest close to each other. In forested areas, some birds commence to build as early as May, and they seem to select the tallest trees. The nest is a platform made of sticks and slender branches. Three white eggs are laid.

FOOD. White-necked Storks prefer to feed solitarily or in pairs, and are usually early feeders, commencing before dawn. They also feed in the afternoon and late evening. The chief food is frogs and small fish, but rodents, insects and refuse are also eaten. On the coastline, they are seen sometimes at river mouths and upstream. They are not very active feeders.

BLACK-NECKED STORK

Gujerati Name—Bénaras

Xenorhynchus asiaticus asiaticus LATHAM

SIZE. Considerably larger than the White Stork, standing about 4 feet.

IDENTIFICATION. This is the largest of our Storks and the most handsome. It is easily recognised by its black bill, and glossy black head and neck which appear emerald-green and purple in bright sunlight. Its glistening white body and the dark upper-parts give it a sort of pied appearance, the back, scapulars and median wing-coverts being dark bottle-green. The pure white primaries and most of the secondaries are conspicuously seen in flight. Tail, short and black; upper tail-coverts, white; legs, red to deep pinky-red. Eyes, dark brown in the male, yellow in the female and brown in young birds; otherwise, the sexes are alike. The head, eyes and breast of the female are reminiscent of a Shoveler Drake in full plumage. The fledglings are dark brown. The lower-breast to abdomen are white. The wings are blackish-brown with a greenish gloss. On the underside of the dark primaries, there is a conspicuous white patch. The Black-necked Stork is not uncommon and is seen in pairs or alone but never in flocks on lakes, marshes, streams, rivers and the seashore. It is a much shyer bird than the other Storks, taking wing from a long distance, but close to villages it allows near approach to the local folk. The body-pose is much more erect and a pair together has a graceful appearance. While walking, the bird even appears majestic.

NOTES. In flight, it is strong, fairly graceful and not slow, and the wings look more curved downwards than in other Storks. I have timed the birds to the speed of a car at 55 m.p.h. The wing-beats appear slow, but the bird is capable of travelling fairly fast. Every large lake, river and stream has a pair or two of these magnificent Storks in the area. On the sea coast, it is quite often seen on mud-flats and close to the mouths of rivers. The birds are invariably silent except when displaying with their bills during the breeding season or when attacked by trained Falcons. When thus attacked, they snap the bill rapidly, making a loud clattering sound; this, more often than not, intimidates the pursuer. This species is one of the Water Birds which betray the 'shikari' while he is stalking crocodiles. It has a keen eyesight and takes wing and thus warns the reptile which immediately slips into the water.

DISTRIBUTION. The whole of India including Saurashtra. Resident and not uncommon. The bird moves locally from one area to another, depending upon the availability of food.

NESTING. Season—September to February, most birds laying in November and December. The courtship appears to be a sort of a dance in which the birds

face each other with outspread wings and then emit a clapping sound with the bills. Also, I have often seen a bird flying with a branch in its bill with its mate following, and then dropping the branch in mid air and picking it up again. I do not know whether this behaviour indicates courtship in flight or only a part of the nest-building. The nest is a large platform consisting of massed up sticks and branches, with a slight depression in the centre. The tallest available trees, not very far from water, are chosen and the nest is generally placed in the centre of the top. Particularly the solitary trees, such as the Silk-Cotton, (*Bombax*) the Banyan and the Pipal, are utilised. Of thorny trees, I have seen nests on the 'Babul' and 'Khijada' (*Prosopis spicigera*) trees. The tree may not always be close to water, but I have seen the birds nesting on small islands next to water. Two eggs, and rarely three, form the normal clutch; they are long, and buffy-white. Once a large nest is made, a pair may use it, renovating it from time to time. They emit a few grunts during the breeding season. Fledglings jump up in the air to try out their wings, as if a diver is "bouncing the board".

FOOD. Frogs, fish, mud-gobies, prawns, and freshwater and marine life. The birds are seen solitary or in pairs on lakes, rivers, streams and the sea coast. I have often found them very active, running after their prey with extended wings up and down a shallow stream. Unlike the Painted Stork, this species depends much upon catching its food after it is seen and quite independently of any communal help. If necessary, it wades in fairly deep water up to the knees or higher. After feeding, it sits hunchbacked on its tarsi with the neck drawn in, or bask high up in the sky soaring in circles. It is a cleaner feeder than other Storks and the only exception is when it forages on the mud-flats at ebb time and during the Monsoon.

FLAMINGO

Gujerati Name—Baḷō or Hunj

Phoenicopterus ruber antiquorum TEMMINCK

See Coloured Plate 9.

SIZE. Body that of a Goose, but with enormously long slender legs and neck. Standing about 4 feet to top of head.

IDENTIFICATION. An unmistakable long-necked and long-legged pinkish-white bird with a grotesque Parrot-shaped bill. The comparatively small body and short tail should also be marked. In breeding plumage, the bird is of a beautiful rosy-pink colour with scarlet wing-coverts. In non-breeding plumage, however, the general appearance is of a whitish bird with a tinge

of pink. Eyes, pale lemon to bright yellow; orbital skin, pink; bill, pink but tipped with black; legs and feet, bright pink; feet, webbed. In flight, the black primaries and outer secondaries are conspicuous. The young birds are greyish-brown on the upper-parts which are often streaked, and whitish on the lower-parts; the bill is brownish-black, but white in some, while the legs are dull brown or slate. These birds are usually seen in large flocks or in small groups on lakes as well as on the seashore.

NOTES. In flight, the long neck and legs, which are kept outstretched, give the impression that the wings are short and slender. The wing-beats are fairly fast. The Flamingo is seen mostly on the sea coast and lagoons in fairly large numbers, but some visit inland lakes, tanks, and rivers close to their mouths. When sleeping, the long curved neck is rested on the back, but there is always one or two birds on the look out for danger. They fly fairly low and in a V-formation when migrating on the sea coast, and rarely are they seen in single file or in an irregular mass. The long legs strike the water surface repeatedly before the bird is air-borne; a short run is necessary which gives an impression as if the bird is running on the surface of the water. While alighting, however, it seems to experience little difficulty. The Flamingoes seem to arrive at irregular times of the year and though the majority of the birds come at the end of October and remain with us throughout the Winter season, many are seen during the hot weather from April to May. Their favourite places are the extensive mud-flats and mouths of rivers near the sea. Inland, they come in small numbers. A flock of birds may be heard from a great distance emitting their various calls, the commonest ones being a *ghonk-ghonk* and a *gag-gag*. A whistling call is also emitted.

The male is slightly larger than the female and can only be identified if in company with the opposite sex. The plumes on the mantle may be seen erected when the wind is blowing. Solitary birds are sometimes seen on lakes as well as on the seaside. A flock of Flamingoes flying is indeed a gorgeous sight as the sun strikes the pink feathers under the wings.

DISTRIBUTION. Breeding in South Europe, the Persian Gulf, Afghanistan and the Great Rann of Kutch between Pacham and Khadir Islands. That they are breeding in Kutch, the only place in India, was discovered by the late His Highness Maharao Khengarji of Kutch and the credit goes entirely to him. They are found in most parts of India during the Winter season and almost all over Saurashtra in small or large numbers. They are abundant during the Winter months, chiefly on the sea coast. Here, they often mix with the smaller species. I have, however, seen them at various times almost throughout the year.

NESTING. Season—July to November, and rarely March to April, depending much upon the level of water and food conditions. The birds nest in thousands.

The nest is a mound of mud on the top of which a slight depression is made; in this depression one or two longish white eggs are laid. The nest is made by scooping mud with their bills. They do not regularly breed in the Rann of Kutch, this depending much upon the Monsoon. As the migration starts, thousands of young birds fly away with their parents from their breeding grounds but leaving behind hundreds of nestlings and young which are not able to fly.

FOOD. With their necks outstretched and lowered, the birds feed in shallow water and mud, and one often sees them marching up and down the flats in regimental fashion. However, they have a tendency to scatter while feeding, but once they have had enough food, they stand at the water's edge or in water close to each other. While the birds are feeding, it is possible to approach them within 50 yards, especially on moonlight nights. As they feed, a guttural *gag-gag* is heard. At favourite feeding spots, they mill around in scrum-like fashion. I have watched them feeding time and again, and have noticed that they work their heads and bills in a semi-circular fashion from side to side describing the figure of an arc. As they walk, they plough their bills in mud. They seem entirely engrossed while feeding but if one of them becomes alarmed for some reason, it raises its head and, then, the whole flock reacts in similar fashion and becomes absolutely motionless. Thus disturbed, the birds will often flap their wings which is a sure sign that a sudden take off of the entire flock is imminent. They can swim well and may be seen doing so in fairly deep water, having a Swan-like appearance. Much of the feeding coincides with the incoming and outgoing tides, but if the birds are hungry or the food is abundant, they feed at any time of the day. They seem to feed on minute seeds, brine shrimps, algae, and organic matter in mud. They dip their bills in shallow water or mud and the fine dentation in their curved bills stop the food from escaping while the water is subsequently ejected.

LESSER FLAMINGO

Gujerati Name—Nānō Ba|ō or Nānō Hunj

Phoenicopterus minor GEOFFREY

SIZE. About that of the Grey Heron.

IDENTIFICATION. Much like the last bird, but smaller in size. The birds are recognised by their richer rosy-pink plumage, and brighter scarlet colour on the wing-coverts. In non-breeding plumage, they assume a duller

and whiter appearance. In contrast to the last species, the bill is redder, most of it being dark carmine-red with a light band across it. Some birds, however, have the entire bill blackish or dark reddish-brown. The young are greyish on the upper-parts, with white on the rump and back; the legs are slaty; some have an entirely white bill; they emit a whistling or mewing call. Their thicker necks separate them from the larger species. As in the last species, Lesser Flamingoes are seen in large numbers, but strangely, in certain years, they are scarce. They are generally found on the sea coast and are less often seen frequenting inland lakes than the larger species.

NOTES. As regards their migration, they seem to arrive earlier in Summer and in greater numbers than the larger species, often accompanied by very young birds hardly able to fly, and I have regularly seen them at Gopnath Point just before the Monsoon, and again in Bhavnagar and Hathab in August and September. However, their movements are rather irregular and I have found them absent at various times of the year except during Winter. The birds emit a sort of Parrot-like call and a note like the sound made by a piece of furniture on castors when it is being dragged on a stone floor. They also emit the usual *gag-gag* or *ghonk-ghonk* peculiar to the genus. In flight, the black primaries and outer secondaries are noticeable as in the larger species. The male is generally brighter and slightly larger than the female but in a mass of birds which are not in full plumage, it is difficult to separate the sexes. At times, one may come across a group composed entirely of young birds. A large mass of bright rosy pink on the seaside invariably reveals to be a group of these Flamingoes in full plumage.

DISTRIBUTION. The African Continent to India. Their breeding grounds are in Africa. Found in most parts of India including Kutch, Gujerat and Saurashtra, especially on the coastal belt. Common migrants.

NESTING. Not recorded in India.

FOOD. Same as the last species. The birds scatter while feeding and get together in favourable feeding spots. They are seen feeding at salt pans, lagoons, and mouths of rivers, and, sometimes, lakes.

EASTERN GREY LAG GOOSE

Gujerati Name—Gāj Hāmsa

Anser anser rubrirostris SWINHOE

See Coloured Plate 9.

SIZE. Same as the domestic Goose.

IDENTIFICATION. Upper-parts, French-grey mixed with brown; wing-coverts, brown; base of primaries, pure French-grey; lower-back and rump, grey with white upper tail-coverts; eyes, brown; head and neck to breast, greyish-brown. Lower-parts, whitish with some blackish spots; tail, brown with white outer pairs of feathers and brown central ones tipped with white. Bill, pink with white nail and a narrow rim of white feathers at its base; legs and feet, pink, sometimes purple. Sexes alike.

NOTES. This bird may have been a regular Winter visitor to Northern Saurashtra at one time, but it is now a rare straggler. The only authentic record I have comes from Wankaner; a specimen sent to me in the Winter of 1947 proved to be a gander of this species. These Geese are usually found in small flocks, visiting lakes and salt marshes during the cold season. They are known to be very wary, taking wing from a long distance. In size, they are as large as Nukhta drakes. There is no doubt that at one time this species was a regular visitor to Kutch and that many birds crossed the Rann to enter Saurashtra, and the Journal of the Bombay Natural History Society (Vol. XXVI, Page 674) gives evidence to this. The extract reads as follows :—

“ I was shooting with His Highness the Maharaja Jam Sahib at X'mas;our bag in three or four days round Balambha also included half a dozen Greylags. ”

DISTRIBUTION. Northern Europe to Asia, and wintering in Northern India. Once fairly common in Kutch; visiting Northern Saurashtra during Winter; now a rare straggler into Saurashtra.

FOOD. Green grass, grain, seeds and aquatic life. Harmful to crops at times.

BAR-HEADED GOOSE

Gujerati Name—Rāj Hāmsa

Anser indicus LATHAM

SIZE. Same as the domestic Goose.

IDENTIFICATION. A large Goose, recognised by two black bars on the nape. Head and neck, white; rest of body, brownish-grey; eyes, dark brown or black;

bill, orange-yellow and tipped black; legs, yellow. The call is a loud *hōnk-hōnk*. Sexes alike.

NOTES. The only specimen recorded in Saurashtra came from Jamnagar, shot during the Winter of 1951.

DISTRIBUTION. Tibet, Kashmir and Ladak; migrating southwards into India upto Mysore. Very rare in Saurashtra, Kutch, and Gujarat.

FOOD. Food crops and water insects. It is known to ravage field crops, e.g., gram, rice, etc.

LESSER OR COMMON WHISTLING TEAL

Gujerati Name—Nāni Sisoti Batak

Dendrocygna javanica HORSFIELD

See Coloured Plate 11.

SIZE. Smaller than the domestic Duck.

IDENTIFICATION. A drab looking reddish-brown Duck with blackish crown and nape; wings, dark slate-grey, appearing almost black in flight; upper-parts, dark slate grey and having chestnut-brown edges to the feathers; upper tail-coverts, chestnut; lower-parts, plain khaki-brown to reddish-brown; eyes, black with a yellow orbital rim; bill, black to slate-grey; legs, comparatively long and black to slate in colour. The call is a double whistling note like a *wheeū-whēēt*. Sexes alike.

NOTES. The Whistling Teal is one of our common residential Ducks. It is, however, prone to local movements. It is mostly seen just before the rains break, throughout the rainy season and after. In Winter, these Tree Ducks mingle with the migratory Waterfowl, but usually keep together in flocks, sometimes in fairly large numbers. Like Nukhtas, they become scarce from March to June. Nevertheless, they are seen on large lakes and perennial waters until the onset of the Monsoon which is their breeding season. They may, then, be seen flying from one piece of water to another in search of nesting sites or food. The flight is comparatively slow for a Duck, the wing-feathers being less pointed than in most of our Ducks. Whistling Teals readily alight on trees, and their legs are well-adapted for perching. At times, the somewhat rounded wings and the style of flight remind one of Herons, though the flight is rather more rapid and their characteristic way of circling over a piece of water is quite unlike a Teal. During Winter, when they flock together, they can always be distinguished from other migratory Waterfowl by their sharp whistling calls which they often emit. In a Duck shoot, Whistling Teals very reluctantly

leave the water and the slow flight makes them an easy target for the sportsman. When disturbed by gunfire, they tend to circle much in the same way as Glossy Ibises, the dark wings giving them a close resemblance to that species. Once disturbed for any length of time, they tend to leave the water unless attracted by the whistling notes of other members of their own species. I have often imitated the whistle of this Duck and attracted it over to my side very closely. It is not a good table bird and is, therefore, left alone by some sportsmen. While swimming, the short tail is kept low on the water and the head and neck are held erect. In Summer, I have seen as many as 200 birds together on large and small lakes, waiting for the rains to come.

DISTRIBUTION. Most parts of India, including the whole of Saurashtra, Kutch and Gujerat, and extending upto the East Indies. Resident and common; local migrant.

NESTING. Season—June to October. Most birds nest from August to October, depending much upon the rains. They nest on trees as well as on the ground. Trees standing in water are preferred to those on land. In many cases, the nest used is an old nest of a Crow, but most of those that I have found were in the tall grass which grows on shores of lakes. Islands without large trees are preferred when the birds are laying on the ground, and I have found eggs in grassland three miles away from the water. However, such a case is rare, for the nests are not usually far from water. When selecting their nesting site, both the birds fly and circle over the area frequently and, then, hover for some seconds over the likely site. This action often betrays the nest. However, once incubation has begun, the parent bird sits tight, hardly giving any clue. Nevertheless, if the birds are closely watched in the early morning, it is possible to see one of the parents alight in the grass to visit its mate or to take over the eggs. This is a sure sign of a nest. When flushed off the nest, the brooding bird acts as if it is wounded in order to distract the enemy. 8 to 12 eggs of ivory-white colour are laid and the incubation lasts for about 25 days. In the breeding season, the Crow is a great enemy of these birds. The young in down are black and white, the bill being red-tipped. Both the parents take care of the young.

FOOD. Aquatic plants, insects, fish, grain and seeds. While feeding, these birds put their heads downwards and upend. Also, they dive like Pochards to reach the bottom.

SHELD-DUCK

Gujerati Name—Saféd Sŭrkhāb

Tadorna tadorna LINNAEUS

See Coloured Plate 20.

SIZE. About that of the domestic Duck.

IDENTIFICATION. A large Duck with a black, white and chestnut plumage. It has a chestnut pectoral band. Head and neck, dark bottle-green with the speculum metallic green bordered above by chestnut; wing-coverts, mostly white; bill, red; legs, pinky in adult birds and lead-coloured in young ones. Sexes alike. However, the female is duller in colour and lacks the knob at the base of the bill.

NOTES. I have never seen this bird in Saurashtra, but there is one record of its occurrence in Nawanagar. See J.B.N.H.S., Vol. XXVI, Page 674 :

“ I was shooting with His Highness the Maharaja Jam Saheb at X'mas and on the 28th December, we shot a nullah near Balambha about 36 miles N.E. of Jamnagar. Among the bag was a pair of Sheldrake. They are the first I have seen in Kathiawad. They were in very fine plumage and the collar and markings down the breast and belly were of a deeper richer chestnut brown than that depicted in the plate in Stuart Baker's Duck Book. I measured the male bird as he lay on the ground, without stretching, and he was 2 feet.”

DISTRIBUTION. Europe to Central Asia and Japan, and migrating to Africa, and India. Straggler into Saurashtra and Kutch.

FOOD. Marine crustacea, moluscs and algae.

RUDDY SHELD-DUCK OR BRAHMINY DUCK

Gujerati Name—Brāhmaṇi Batak or Sŭrkhāb

Tadorna ferruginea PALLAS

See Coloured Plate 10.

SIZE. About that of a large domestic Duck.

IDENTIFICATION. A large Duck of almost uniform ferruginous colour, being fairly conspicuous from a distance. The eyes, legs and bill are black. A white patch on the fore-wing or the wing-coverts is conspicuous; the speculum and the secondaries are bright bottle-green; the black flight feathers, the upper tail-coverts and the tail are clearly seen in flight. Usually, the male has a richer colouration though this is not always the case. There is a black

ring round the neck of the male which is often absent. Also, he is a shade larger than the female. Some birds are paler and have more white on the forehead than others; these are usually females. The call is loud and distinct.

NOTES. The Brahminy Duck is a Winter visitor, arriving about October and leaving in March-April. In flight, it is readily identified by the white fore-wing, the bottle-green speculum and the black feathers of the wing and tail. It has a characteristic harsh call which it often utters on the wing, *viz*, *karr-r-karr-r*. A loud *ko-ank ko-ank* alarm call is also emitted. The wing-beats are slower than those of most of our Winter Ducks, but the speed is equally great. While flying, the drake usually leads. The Brahminy Duck comes from the North and is seen in small flocks of 40 to 50 birds; it is also seen in pairs. It keeps to open waters, rivers, lakes, the sea coast and salty marshes. However, its preference is for the sea coast, mouths of rivers and sand banks being particularly favourite spots. It is a very wary bird, never allowing close approach except in areas where it is unmolested. It seems to discriminate with much accuracy between a peasant and a shikari. It has a very keen eyesight, and any suspicious object is kept at a good distance. It is a common Duck on the Eastern Saurashtra sea coast during the Winter and Spring months, and I have seen as many as 400 or more birds congregating in March. They are seen all along the rivers, being found in greater numbers near their mouths. Shikaries find it difficult to approach them, and unless they make use of a small rifle, they cannot easily bag them. While pursued by trained Falcons, the Duck accelerates its flight by quick wing-beats and outflies some of the swiftest birds. If it is not outright killed by a fatal swoop, it lowers its head and ruffles the feathers, making an attempt to attack the Falcon, and when caught, it flaps its wings vigorously in defence. At the carpal joint of the wing there is a sharp spur or thorn-like protuberance which is used for defence; this is not visible except when closely inspected. These birds very seldom leave water, flying over it when chased. However, there are practically no Birds of Prey which attack these powerful Ducks, and I have seen them leaving lakes and rivers and crossing high and dry land while migrating during the day time, which few Ducks will do on their own. Brahminy Ducks migrate by day as well as by night, and I have often heard them calling in characteristic manner and seen them on moonlight nights moving from one place to another. They are sometimes seen away from water, especially while grazing. Normally, however, they feed at the water's edge and in water. They rest high on the water and dive well. They can be seen diving in playful mood in February and March when they generally begin to come into breeding condition, and I have noticed that at this time they feed greedily upon the green algae. The Brahminy Duck is among those that give alarm to crocodiles when shikaries are stalking the sleeping saurians; the alarm call and the suspicious behaviour of the bird at once warns the crocodiles of danger, and those that

neglect this signal generally succumb to an accurate shot. This Duck is rather fishy in taste and unpalatable. At Duck shoots, it immediately leaves the water and flies fairly high and out of range, and hence only a few are bagged. The calls, if imitated, will attract the birds closer. They have a keen eyesight, and change their course immediately when they suspect danger. They are handsome Goose-like birds which tempt sportsmen to add them to their bag, but, alas, the meat is fairly foul.

DISTRIBUTION. Southern Europe and Asia Minor to the Himalayas. The bird breeds in Tibet and parts of Kashmir, and migrates southwards in large numbers into most parts of India including Saurashtra, Kutch and Gujarat during the cold season, being fairly common on the Eastern coast of Saurashtra, and also on the S. W. and North-Western coasts. Although found in Northern and Central Saurashtra from Wankaner and Rajkot to Dhrangadhra, it is more of a passing migrant there. It arrives at about Divali time (October-November) and departs in March-April.

FOOD. Algae, molluscs, grass, grain and aquatic life, mixed with mud. The bird feeds in shallow water and grazes on grass and eats seeds on land. It feeds very early in the morning and late in the evening, and also during the night. It flies to small streams, marshy lakes and ponds for feeding, and returns at sunrise to larger stretches of water. This behaviour is best seen before the birds leave in March-April. While foraging, they are always on the look out for danger and, after giving their warning notes, take wing on the slightest approach. After feeding, they rest on open sand banks but always keep an eye open for danger.

MALLARD

Gujerati Name—Neelsir

Anas platyrhynchos LINNAEUS

See Coloured Plate 10.

SIZE. Same as the domestic Duck.

IDENTIFICATION. Male in full plumage: Bill, greenish-yellow; head, emerald-green; a white ring on the neck; breast, deep chocolate-red; a bluish-purple speculum with white borders on the wing. Upper-parts, grey-brown, pencilled above and on the flanks; under-parts, whitish-grey; upper tail-coverts, black with a green sheen; tail, white and brown; legs, orange-red; eyes, brown; wings, brown; wing-coverts, slate-grey. There are usually two black curled feathers above the tail from which the bird is readily identified at close

quarters. Female: Upper and lower parts, khaki-brown mixed with black; breast, boldly streaked; bill, olive with orange edges and a black tip. As it rises, the Mallard, emits a loud quack which is characteristic of the female of the species, the male emitting a low whispering note. When the birds are flushed, the duck usually rises first, but once in full flight, the drake takes the lead.

NOTES. The Mallard is rare with us, and is only seen during the cold weather. It prefers brackish waters and reedy ponds, and is found on lakes, rivers, streams and small pools, generally close to reeds. It is a rare but regular visitor, coming in small numbers, and since it prefers seclusion, it is seldom seen. It is sometimes bagged in Duck shoots. Small groups consisting of a dozen birds have occasionally been seen, but otherwise three to eight birds is the usual number encountered. This handsome species is partial to reedy patches in small stretches of water. I have noted that they keep more often to the coastal areas. One year (1934) in the Talaja District, I found them fairly plentiful and I counted over two dozen birds on various sheets of water. Some sportsmen say that the Mallard is the first to leave water in a Duck shoot and I believe this is normally the case. Nevertheless, it is equally true that at times it does not rise from thick reedy patches until well after the shoot has started, and I remember an instance when three Mallards did not rise until the shoot was over, and it was just when the men had entered the water to retrieve the fallen Duck that these three birds were flushed. Mallards are seen in places where one least expects to find them. However, I have several records of them being shot at particular tanks. This predilection to visit certain types of tanks reveals that they prefer a special kind of reedy environment, and I noted that particular reedy ponds were visited by these Ducks in consecutive years. This was corroborated by R. K. Chandrabhanusinhji of Wankaner, a keen Wildfowl hunter. I once put up a dozen or more Mallards in a small reedy pond on which one might only have expected to find a pair of Ducks. I have seen them closely associating with the Spotbill Duck, and I recall seeing a drake which had joined a female Spotbill. I have recorded the Mallard in September-October and also in April. The bird is a rapid flier, having a fast wing-beat, and it is not inferior in speed to any other Duck. The average weight of a drake is $2\frac{1}{2}$ lb. It is the best table Duck and hence prized by sportsmen. It is interesting to note that most of our domestic Ducks are of the Mallard strain. The curled feathers of the Mallard drake are used to decorate the ear-rings of Indian ladies, while sportsmen are seen to fix them in their hats.

DISTRIBUTION. Breeding in Kashmir and parts of Europe, N. Africa and Northern Asia, and migrating southwards to most parts of India including the whole of Saurashtra. Rare in Saurashtra, Kutch and Gujerat. I have records of the bird from Bhavnagar, Jamnagar, Mangrol, Wankaner, Dhrangadhra,

Morvi, Rajkot, Palitana, Jasdan and Porbandar, but nowhere is it common, being seen more often on the coastal belt.

FOOD. Green aquatic plants and their seeds, aquatic insects and larvae, frogs and grain. It is found feeding in cleaner waters and prefers brackish marshes and streams. On account of its clean feeding habits, it has been successfully domesticated and is good eating. It feeds in the early morning and evening, and seeks the refuge of tall reeds during the hot hours.

SPOTBILL OR GREY DUCK

Gujerati Name—Teelāvāji Batak

Anas poecilorhyncha poecilorhyncha J. R. FORSTER

See Coloured Plate 11.

SIZE. About the same as the domestic Duck.

IDENTIFICATION. A fairly large Duck which can readily be identified by the jet black bill with a bright yellow tip, and by two orange-red and fleshy triangular spots on top of the upper-mandible at the base of the forehead. Crown and nape, dark brown; eyes, brown and with brownish streaks across them; legs, orange. Upper-parts, blackish-brown and edged with pale brown; rump and upper tail-coverts, blackish; lower-parts, tawny-white and spotted with brown, especially on the breast. The Spotbill is also recognised by the white of the inner secondaries on the sides of the wings. In size, shape and call, it resembles the Mallard to which it is closely related, but it is, if anything, slightly larger. Again, its neck is longer and more slender than that of the Mallard and the bird does not often keep its head pressed down while swimming. In flight, it is a little slower. The speculum is bright metallic green with white and black bars, unlike that of the Mallard which is purple and blue. The sexes are alike except that the male is slightly larger and has the orange patches above the bill more pronounced during the breeding season. Unlike the Mallard, this Duck retains the same plumage colour throughout the year. In July and August, it is in moult, and I have seen it with hardly any flight feathers and unable to fly.

NOTES. The Spotbill is our resident Duck, and is seen practically throughout the year. It is, however, not found in abundance in Winter like the migratory Ducks. Spotbills are seen in all types of waters, and during the hot months they congregate in large numbers on lakes, but they are at the same time prone to local movements, just like the Whistling Teal and the Nukhta. Nevertheless, I have seen them in every month of the year in one locality; this is a

behaviour which cannot be ascribed to the Whistling Teal or the Nukhta. The Spotbill is found on lakes, rivers, ponds and odd patches of water during the Monsoon and Winter. During the hot weather, I have seen flocks of over 300 birds on lakes, but they normally remain in groups of 5 to 20 birds, and a few pairs are commonly seen. The female rises with a loud quack and the male utters an audible whispering note. In flight, the drakes appear definitely larger and are generally leading. In Winter one may see an occasional Spotbill mixed with a group of Teal or Pintail. The Spotbill is not a wary Duck and offers a fairly easy shot. It is excellent for the table.

DISTRIBUTION. The whole of India and Saurashtra. Resident and local migrant.

NESTING. Season—June to November. However, August, September and October are the principal months. The birds usually lay in reed-beds close to water. The nests are lined with the down of the parent bird, but some are almost devoid of feathers. 7 to 11 eggs is the normal clutch. They are oval and ivory-white. I have found nests under bushes, in Banana plantations, and in long grass not far from water. They are as a rule difficult to find. The female incubates, but when the young hatch, the male is often seen swimming with the family. At this time, the birds lie in the reeds and do not always rise even when there is firing. Reedy patches, riversides, lakesides, and areas below irrigation tanks are the places to look for their nests. The female feigns a broken wing or drags herself along the ground to divert attention from the nest or the young. The young are expert divers like their parents. The immature birds are not as large or as brightly coloured as the adults.

FOOD. Aquatic plants, seeds, insects, molluscs and frogs. The Spotbill is a clean water feeder like the Mallard except when on tidal mud-flats and Monsoon waters.

GADWALL

Gujerati Name—Luhār

Anas strepera LINNAEUS

See Coloured Plate 10.

SIZE. Between the Mallard and the Teal.

IDENTIFICATION. Male: A dark blackish-grey bird in general appearance which is identified by a chestnut patch on the wing-coverts and by black and white feathers on the wings, the whiter ones forming a speculum. The dark blackish-grey breast-feathers have light coloured half moon shaped edges; the blackish-grey vermiculations on the upper-parts are finer. The under-parts

are white, the tail is black with pale creamy-white outer tail-feathers, the bill is black and the legs are dull orange. Female: Brown but mixed with black on the upper-parts; the lower-parts and flanks are whitish and spotted with dark-brown; the bill is dull orange mixed with black. She resembles the female Mallard but can easily be distinguished from her by the white speculum, the orange-yellow, and not orange-red, legs, and more orange on the sides of the bill. The call of the female is much like that of the Mallard duck except that it is shriller.

NOTES. The Gadwall is a Winter migrant, arriving in fairly large numbers. It is one of our common Ducks. However, in some years, it is found in fewer numbers than other common varieties, but in the Winter of 1934-5, it came in such large numbers that Teal and Shoveler remained in the background. In flight, it is fairly rapid and the whistling sound of the wings can be clearly heard. Its wings are more pointed and the wing-beats more rapid than in the Mallard. When these birds first arrive, they are often seen on the seashore following the coastline. I recollect shooting a male Gadwall at Wankaner which had the lower-breast to abdomen a salmon-pink instead of the usual white. The Gadwall is seen in small flocks of about half a dozen to 30 birds. During Duck shoots, the birds fly fairly fast in a definite formation; they afford good shooting and much of our bag consists of this species. The earliest record of arrival comes from Jasdan which is 20th September, 1948.

DISTRIBUTION. Breeding from the sub-Arctic region to South Europe and North Africa, and migrating south to the tropical regions. Common in India, including Saurashtra, Kutch, and Gujerat, during the Winter months.

FOOD. Similar to other Surface Ducks, i.e., those that usually feed from the surface and do not indulge in diving to the bottom for their food.

WIGEON

Gujerati Name—Piyāsana

Anas penelope LINNAEUS

See Coloured Plate 10.

SIZE. Between the Mallard and the Teal.

IDENTIFICATION. Male: Forehead and central part of head, creamy-white; head and neck, brick-red; flanks and back, vermiculated with light grey and mixed with clay-yellow; lower-parts, white; tail and upper tail-coverts, blackish, edged with white feathers; wings, brown; a bright patch of green forming a part of the speculum. The Wigeon drake is readily identified

by the buffy-pink upper-breast, the creamy-white forehead, and the conspicuous white patch on the wing-coverts which is reminiscent of the Ruddy Sheld-Duck. The bill is narrow, slightly curved upwards, bluish in colour and tipped black; the legs are black. The female is altogether a browner bird and has spotted breast. She is lightly suffused with reddish-brown, and is drab in colouration, lacking the white wing-coverts; the speculum is subdued and margined with white bars.

NOTES. The Wigeon is fairly common during Winter and is often seen in pairs or in large flocks. It prefers to keep to clear waters. It sits fairly high on the water like most Surface Ducks. Its manner of sitting on the water gives it a compact appearance, and the head is well pressed in. While flying overhead, the oval white patch on the lower-parts will readily identify the bird. On windy days, the Wigeons keep to uniform groupings. They are good for the table.

DISTRIBUTION. Breeding in Northern Europe and Asia, and migrating southwards to the Equator. Common in India, including Saurashtra, Kutch, and Gujerat, during Winter.

FOOD. Same as other Surface Ducks.



COMMON TEAL

Gujerati Name—Nāni Batak or Mūrghābi

Anas crecca crecca LINNAEUS

See Coloured Plate 10.

SIZE. Smaller than the domestic Duck.

IDENTIFICATION. Male: Head, chestnut-brown with a broad and dark glossy green band from the eye to the back of the head; bill, black; eyes, brown; legs, black; upper-breast, dull white and spotted with black; the rest of lower-parts to vent, white; upper-parts and flanks, pencilled with black and grey; scapulars, black and fawn, and overlapping the wing-coverts; wings, brown and with a bright green and black speculum and a white bar at each end: these bars are often mixed with cinnamon; lesser wing-coverts, slate-grey; tail, black, mixed with white. In full plumage, a yellow patch is found on each side of the black under tail-coverts. Female: Brown and not having such a bright speculum as the male; breast, more brownish; no pencilling on the upper-parts, flanks or rump; tail, brown. Young males and some males in non-breeding plumage are difficult to distinguish from the females, but the pencilling of the upper-parts is always a key to recognise the males. The female emits a short quack which is shrill while the male utters a musical *krit krit*.

NOTES. The Teal is one of our commonest Ducks during Winter, and it is seen on little patches of water as well as on large tanks and lakes. These birds are often seen on the sea while migrating. They are normally met with in small flocks and have a rapid flight, rising from the water quickly and turning in the air with ease. However, during Duck shoots, they are not very shy, and on account of their reluctance to leave the sheet of water on which they have settled, they are shot in larger numbers than any other species. While travelling over water, they fly low over the surface; they also have a habit of circling, and suddenly and swiftly changing course. Owing to this behaviour, they are easily recognised from a distance. When pursued by Falcons and Eagles, they accelerate their speed and fly low over the surface. However, when a trained Peregrine is 'waiting on' above, the Teal tenaciously fly over the water and plunge into it as soon as pursued; it is usually very difficult to drive them away from the sheet of water which they affect. At this time, they may be caught by hand. At most Duck shoots, I have noticed a preponderance of males over females. The migration takes place by night as in most Ducks, but fairly low, and one often hears the swish of wings as flocks pass overhead.

DISTRIBUTION. Breeding in Europe and N. Asia, and migrating south to the Tropics and India. Common in Saurashtra, Kutch and Gujerat during Winter. They come as early as the end of September and early in October, and leave as late as April.

FOOD. Like all Surface Ducks, they feed in shallow waters and in the smallest of pools and streams, in the early morning and evening, and at night, generally flying to larger sheets of water to rest in as it gets warmer. They are found in muddy as well as in clear waters, in reedy ponds and open pools, and, where feeding grounds are good, they gather in very large numbers. Rarely does one see them alight in dry reeds or grass away from water except when they are constantly shot at.

PINTAIL

Gujerati Name—Singpar

Anas acuta acuta LINNAEUS

See Coloured Plate 10.

SIZE. Slightly smaller than the Mallard but longer.

IDENTIFICATION. The male in full plumage is easily identified from all other Ducks by his chocolate head and long pointed black tail-feathers. The dark brown head is sharply contrasted with the pure white neck, breast and lower-parts; the upper-parts and flanks are vermiculated with slate-grey. The

wings are brown and without a bright speculum which is nothing but a dull bronze-green patch with a copper coloured bar in front. The tail has two long and pointed black feathers; the under tail-coverts are blackish with a yellow patch in front; the legs and bill are greyish-black. The Pintail drake is a very handsome bird and can be recognised from a great distance. The female is khaki and mottled with brown. The short pointed tail has black bars, the crown is dark brown, the lower-parts are buffy-white and streaked with brown, and the bill is black. She is slightly smaller in size and appears as a somewhat elongated and larger edition of the female Teal but lacking the green speculum. Although young males resemble the female, they can be recognised by their grey vermiculated feathers.

NOTES. The Pintail sits high on the water and is a wary Duck. When disturbed during a Duck shoot, it is the first to spiral up into the sky and leave the water, seldom returning to it as quickly as other species. Pintail are fast flying Ducks with rapid wing-beats. On account of their wariness and handsome appearance, sportsmen prefer to bag the drakes rather than other common varieties. Where they are unmolested and accustomed to the noise and movements of village or town life, they become tame, and it is a grand sight to watch them feeding in water, swimming slowly from one place to another, and putting their anterior portion under water and lifting their tails upwards, upending; while doing so the tail is usually depressed. Newly migrated birds are very shy. Pintail are fairly common during Winter. A record from Wankaner of a ringed bird shot by R. K. Chandrabhanusinhji reveals that Pintail come from great distances, as far as South Russia. A flight of Pintail passing overhead makes a whistling or hissing sound. The drakes appear longer than any of our Ducks when flying.

DISTRIBUTION. Breeding in Europe and N. Asia, and wintering south to the Equator. Common in India, including Saurashtra, Kutch and Gujerat, during Winter.

FOOD. Same as most Surface Ducks.

GARGANEY TEAL

Gujerati Name—Chétvā

Anas querquedula LINNAEUS

See Coloured Plate 10.

SIZE. Slightly larger than the Common Teal.

IDENTIFICATION. In shape, very much like the Common Teal. The male in full plumage has a pinkish-brown head and a broad white superciliary

stripe running from the eye to the nape; the breast is dark brown with half moon like markings. The fore-wing is bluish-grey which is reminiscent of the Shoveler; this is one of the main field characteristics which separate this species from the Common Teal. Conspicuous white margins to the dull green speculum, when seen at close quarters, is another distinguishing feature. The bill and legs are blackish. The female is brown and much like the Common Teal but distinguished from it by the dull grey fore-wing, the dull green speculum and the faint superciliary stripe. This is one of our first Ducks to arrive and the last to leave. When they come, they are not in full plumage, and the males have a faint white supercilium on a dull coloured head and their upper-parts are brown. I have noticed that when the birds arrive, they are rather restless. In flight, the Garganey resembles the Common Teal, but to trained eyes, it appears larger and longer and slightly slower, turning less in its flight.

NOTES. It is commonly seen on lakes, tanks and all other kinds of waters. Some birds are seen as early as the middle of September and they leave about the end of April. They are not as abundant as the Common Teal nor are they seen in such large flocks. The drake's call is like a sound caused by a hollow stick when quickly drawn over other similar sticks. The duck's call is a shrill *quack*. I have recorded males on 12th September, 1943, at Gaurishanker Lake, Bhavnagar, and on 23rd June, 1947, at Hathab. A pair was seen at Porbander on 9th May, 1949.

DISTRIBUTION. Breeding in Europe and Central Asia, and migrating to the Tropics. Common Winter migrant throughout India and Saurashtra.

FOOD. Same as other Surface Ducks. These birds prefer low green patches of reeds, much like the Teal.

SHOVELER

Gujerati Name—*Pagtichāṇch*

Anas clypeata LINNAEUS

See Coloured Plate 10.

SIZE. Somewhat smaller than the Mallard.

IDENTIFICATION. Male: Head, glossy green; eyes, yellow; bill, black and broad at the end; breast, pure white; rest of lower-parts and flanks, reddish-brown to chocolate. Fore-wing, bluish-grey; a green speculum bordered with a white bar is present; flight feathers, brown; upper tail-coverts, dark green; the tail has white edges; legs, orange; upper-parts, dark brown to blackish. Males in non-breeding plumage somewhat resemble the female but have traces of

white on the breast and sides. Young males are similar to females but with a bluer fore-wing. Female: All brown, edged with rufous on the upper-parts, and pale reddish-brown to almost light salmon-pink on the lower-parts; the bill is broad at the end, and often mottled with brown and orange-yellow; the bluish-grey fore-wing is reminiscent of the Garganey.

NOTES. This species is our commonest migratory Duck, rivalling with the Teal. It is a Winter migrant and comes in large numbers. The broad bill, which easily identifies the bird, is adapted for feeding on the surface in muddy waters. The drake is a handsome bird in spite of its ugly top-heavy bill. The Shoveler's habit of feeding in foulest waters is well-known to sportsmen. It is not a shy Duck, and where it is not molested and gets accustomed to village life, it will allow close approach. It visits all types of waters and is seen everywhere. In flight, it is fast and has a rapid wing-beat. When overhead, the body and head give it a typical bottle-shaped appearance. It is readily separated from the Mallard even from a great distance by its pure white breast. And yet it is surprising how many people make a mistake in separating the two species, probably on account of the green head. While it is swimming, the shortness of the neck is apparent. Although rapid in its flight and not always easy to shoot, the Shoveler is one of the chief species that fills the bag of the sportsman. As it rises, the bird makes a characteristic whirr with the wings, which once properly recognised will distinguish it from all other Wildfowl. Like most Ducks, it invariably rises against the wind. On the return migration, large numbers congregate on what would appear small and shallow stretches of water. I have always felt that as the hot weather approaches, there is a race between two species, the Shoveler and the Garganey, as to which will leave last. Earliest record of arrival: 15th September, 1952, from Bhavnagar. Latest record of departure: 23rd June, 1947, from Hathab.

DISTRIBUTION. Breeding in Europe and N. Asia, and migrating south to the Tropics. Common in India, including Saurashtra, Kutch and Gujerat, during Winter.

FOOD. Mosquito larvae, aquatic insects and seeds as well as plants and animal life close to water. The spade-shaped bill is convenient for surface feeding. The bird feeds in all types of waters but it is partial to dirty and muddy ones. On account of this habit, some sportsmen consider it a bad table bird.

MARBLED TEAL

Gujerati Name—Dhōli Batak or Saféd Mārghābi

Anas angustirostris MENETRIES

See Coloured Plate 11.

SIZE. About that of the Garganey.

IDENTIFICATION. The entire body is creamy-white to light khaki with transverse markings of light brown. The bird has a mottled appearance, and, at times, females appear almost whitish in the sunlight. It is a very conspicuous Duck when seen with other species. It is recognised by its flight feathers which are grey and by the absence of a speculum on the wings. The bill is black and about equal in length to the head; the eyes are brown and the legs are black. The neck is rather longish, and the upper-part of the head is brown, but this colour is not always distinct.

NOTES. This is a very rare Duck with us, and records of its occurrence are but few. It prefers reedy waters, but there is no fixed rule to this. In flight, it appears slower than our commoner Ducks, and it is seen alone or in pairs. The tendency to keep to reedy patches and the reluctance to leave the water give the sportsman many opportunities to bag it.

DISTRIBUTION. Central Europe to Sind. Migrating south to some parts of India. Rare in Saurashtra and possibly so also in Kutch. It has been recorded at Bhavnagar, Dhrangadhra, Limbdi and Jamnagar.

FOOD. As in other Surface Ducks.

RED-CRESTED POCHARD

Gujerati Name—Lāl-Chāñch

Netta rufina PALLAS

See Coloured Plate 11.

SIZE. About that of the Mallard or Pintail.

IDENTIFICATION. Male: Head, chestnut; bill, bright pinkish-red or crimson with a white tip; the crest forms a sort of a roundish ball; lower-parts, black to blackish-brown; wings, brown with a white stripe across the scapulars; flank-feathers, white and conspicuous; eyes and legs, red. The female is dark khaki-grey with dark brown upper half of the head, which has few elongated crest-like feathers, pale cheeks and dull orange-brown legs. Her bill is blackish with a reddish-brown tip. She differs completely from the male in colour,

being drab. These birds sit low on the water. In flight, a white wing-patch is clearly visible.

NOTES. The Red-crested Pochard is found on lakes, rivers and ponds during Winter, and it is on the whole a rare Duck. Formerly the birds used to come in larger numbers, but now they are rarely seen and are absent from places where they used to be regularly found. They are fairly shy. Diving Ducks prefer deep waters. Flocks of 20 to 30 birds have been seen, but normally they are found in small batches of five or six birds or in pairs. The male is a conspicuous and handsome bird, and can be distinguished from all other Ducks by his bright chestnut head, crimson bill, black breast, and brown and white upper-parts. These Pochards are rapid fliers and rise off the water easily. I have noticed that they prefer secluded waters, especially rivers. As they are uncommon with us, they only amount to 5 per cent of the bag during duck shoots. They have a habit of flying out of range and remaining in the centre of jheels. E. C. Stuart Baker says, in his book on Game Birds of India, Burma and Ceylon, Vol. I, Ducks and Their Allies, page 249, as follows: "The name Pochard should be pronounced 'Pokard,' not with soft 'ch' with which I have heard many sportsmen sound it. In many parts of England these ducks are known as Pokers or Poke ducks, and it is from this that the name is derived."

DISTRIBUTION. Breeding in Southern Europe, Russia, North Africa and Afghanistan, and migrating south of that area in Winter. Migrant to India and fairly widespread in Winter, but common in Saurashtra, Kutch and Gujerat.

FOOD. Plants and animal life from the water.

COMMON POCHARD OR DUN-BIRD

Gujerati Name—Lāl-Sir

Aythya ferina LINNAEUS

See Coloured Plate 11.

SIZE. Slightly smaller than the Shoveler.

IDENTIFICATION. Male: Head, dark chestnut-red and slightly cone-shaped; bill, grey with blackish base and tip; upper-breast, black; body, grey with fine vermiculations; tail, blackish; back, brownish yellow-ochre, only noticed when closely seen; wing-patch, grey; wings, brown; eyes, red; legs, grey. The speculum is absent which fact separates this bird from other Pochards when seen in flight. Female: Head, auburn; eyes, brown; body, greyish-brown with inconspicuous fine vermiculations; tail, browner; upper-breast,

cinnamon-brown. The lower-parts excluding the upper-breast in both sexes are mouse-grey to greyish-white, mixed with cinnamon. Young males resemble the females but their upper-breast is blackish.

NOTES. At one time, the Common Pochard used to be our commonest Winter Duck but since past ten years, it has been decreasing in numbers. However, it is fairly common during the cold months. It is a typical Diving Duck, being often seen diving for food. It sits low on the water and, when rising, it runs for a short distance on the water before taking off. The wing-beats appear fast, but the short wings and the round body make it a slower bird. In Duck shoots, it can easily be bagged on account of its slow flight and lack of wariness. It is seen in flocks but when disturbed, it is reluctant to leave its patch of water. It swims fairly fast. The earliest record is 3rd November, 1934, from Bhal.

DISTRIBUTION. Northern Europe to Russia. Migrating in Winter to India including Saurashtra, Kutch, and Gujerat. Common.

FOOD. Like most Diving Ducks, the Dun-bird feeds both from the bottom and on the surface of the water.

WHITE-EYED POCHARD

Gujerati Name—Dhōli-Ankh or Karchiyā

Aythya nyroca GULDENSTADT

See Coloured Plate 11.

SIZE. Slightly smaller than the Shoveler.

IDENTIFICATION. Male: A dark reddish-brown or bay coloured Duck. Upper-back, dark blackish-brown; wings, dark brown; wing-patch and under tail-coverts, white; upper-breast, rich reddish-brown; the rest of lower-parts, white; eyes, white; legs and bill, slate. The female is more brownish with a less rufous tinge. The eyes are yellowish in the female and the young.

NOTES. This is a small plump-looking Duck, about the size of a Teal, which is found in most parts of the country as a Winter migrant. It is, however, not seen in large numbers. I have observed these Ducks in pairs and up to 20 birds, but rarely more. They frequent small and large stretches of water and, like the Teal, often visit small ponds. As with the larger Pochard, the short wings are conspicuous, but the birds are quicker risers and fairly fast when once on the wing. The broad white crescent-like band on flight-feathers, which is clearly seen in flight, identifies them immediately. They are not abundant, but fairly common during severe Winters. The earliest record is 24th October,

1937, from Bhumbhli. I have seen them more often on reedy tanks and small rivers.

DISTRIBUTION. Breeding in Central Europe and Central Asia to Kashmir, and migrating in Winter to India including Saurashtra, Kutch and Gujarat. Fairly common.

FOOD. Same as the Diving Ducks.

SCAUP

Gujerati Name—Dariāi Batak

Aythya marila marila LINNAEUS

SIZE. Same as the Tufted Pochard.

IDENTIFICATION. This species closely resembles the Tufted Pochard in practically every way except that it has no crest and that the mantle and back are vermiculated. The male is similar to the Tufted Pochard drake but his upper-parts are vermiculated with black and white, giving them a greyish appearance. Also, his head has a purple-green sheen. The female has a conspicuous white patch round the base of the bill which is broader and sharply defined than in the female Tufted Pochard; she has blackish-brown head, upper-breast and mantle; the rest of upper-parts are cinnamon-brown; the lower-breast and the flanks are dull white. The vermiculations on her upper-parts are indistinct and coarse. Immature birds are difficult to separate from the female Tufted Pochard unless the vermiculations on the back are seen.

NOTES. The Scaup is a typical marine Duck.

DISTRIBUTION. Breeding in the Arctic zone of Europe and in Asia. Migrating south to India but there it is rare. There is only one record of its occurrence in Saurashtra and that comes from Bhavnagar State where a bird was shot on the sea coast. It was shot on a pond adjoining the sea. (See J.B.N.H.S. 1935, Vol. XXXVIII, No. 1, Page 195).

FOOD. Marine life, e.g., mussels, crustacea, molluscs, fish, worms, etc. The bird rarely enters fresh water.

TUFTED POCHARD

Gujerati Name—Choṭīlī Kābarī Batak

Aythya fuligula LINNAEUS

See Coloured Plate 11.

SIZE. About that of the Gadwall.

IDENTIFICATION. The male is black and white; the whole of his upper-parts, upto the breast, are black; the lower-parts, from the lower-breast, and flanks are conspicuously white. Wing-patch, white; wings, dark brown; eyes, golden-yellow; bill, grey; legs, slate. The male has a crest falling backwards, which is smaller or obsolete in the female. In the female, the black is replaced by the brown, and the white wing-patch is smaller and surrounded with brown. And her flanks are dull white to brownish. Some birds have white at the base of the bill, resembling the female Scaup, but this patch is not as broad or clean cut as in that species. Young males resemble the female.

NOTES. This Duck is found in all types of waters and is quite common in Winter. It is a slow riser and takes a long run over the water which gives it some resemblance to Grebes. The wings appear short. These Wildfowl sit low on the water and dive excellently. They generally feed by submerging themselves completely and taking food from the bottom. They are often seen on the sea coast where they alight on the sea. An early arrival was recorded at Ruvapari in Bhavnagar on 28th September, 1947, and a late departure was recorded there on 6th April, 1946. These are easy birds to bag in a Duck shoot. Year after year, fewer and fewer Tufted Pochards are seen.

DISTRIBUTION. The bird has a wide breeding range from Northern Europe and Siberia to Japan. Migrating in Winter to India including Saurashtra, Kutch, and Gujerat. Fairly common.

FOOD. Marine and freshwater plants and animal life. A typical Diving Duck.

COTTON TEAL OR INDIAN PYGMY GOOSE

Gujerati Name—Girjā

Nettapus coromandelianus GMELIN

See Coloured Plate 11.

SIZE. Slightly larger than the Pigeon.

IDENTIFICATION. A small Nukhta-like Duck without the comb on the bill. It is the smallest of our Wildfowl. The male in full plumage has blackish-brown crown; there is a black band on the upper-breast with a greenish tinge to it, and the rest of the body is white with the flanks splashed

with brown. Upper parts, brownish-black with a purple and green sheen when seen in sunlight; wings, dark green with a conspicuous white wing-bar on the secondaries: very noticeable when the bird is in flight; tail, brown; eyes, red; bill, black; feet, blackish. The female differs in having brown eyes and crown; she lacks the conspicuous band on the upper-breast and the wing-bar; the legs are mixed with yellow and black. She is, on the whole, a drabber bird.

NOTES. The Cotton Teal is a rare Winter migrant to Saurashtra. It has been recorded at several places, viz., Bhumbhli (Bhavnagar), Wankaner and Dhrangadhra. It does not readily leave the water even when shot at, and it is thus invariably bagged during Duck shoots. On Ajwa Lake near Baroda I found it to be plentiful. The bird emits a shrill clucking call.

DISTRIBUTION. Resident in most parts of India. However, rare in Saurashtra as a vagrant during Winter and a straggler in Kutch but not uncommon in Gujerat where it is resident.

NESTING. Season—July to September. The nesting habits resemble those of the Nukhta.

FOOD. Aquatic plants, molluscs, seeds and grain.

NUKHTA OR COMB DUCK

Gujerati Name—Naktā

Sarkidiornis melanotos PENNANT

See Coloured Plate 11.

SIZE. About that of a small Goose.

IDENTIFICATION. Head and neck, white to pale yellow and spotted with black; eyes, black; bill, black, and in the breeding season a large comb-like protuberance or swelling which is black and finely spotted with white is developed on the upper-mandible; breast and lower-parts, white with a black pectoral band not joining at the centre; flanks, greyish-white; under tail-coverts, having a short black stripe with a yellow patch; wings and coverts, blackish, the latter having a coppery and greenish-blue sheen when seen in the sunlight; tail, black; legs, plumbous-grey to greyish-black. The female is less brilliant in colour and is much smaller than the male, being almost half the size. From a distance, the Nukhta appears a black and white bird of fairly large size. It is seen on lakes, jheels, rivers and shallow pools. Most of the birds arrive during the Monsoon and remain with us partly or throughout the Winter months, though prone to local movements. In the hot months, they are rare or absent.

NOTES. During the Monsoon, I have seen these birds all over Saurashtra in various localities, flying from one place to another and seeking mates and suitable

feeding grounds. They are, however, commoner in the coastal areas. They come specially to breed in good Monsoon years. In Winter, they are found scattered all over the larger lakes and rivers before migrating. They are, however, rather irregular in their movements and it is only during the rainy season that one is sure of seeing them. At that time, they move and visit every little sheet of water in search of food and mates. Nukhtas observe no hard and fast rules; they are often found together in small numbers and yet one may occasionally see a solitary bird. I have seen solitary females and also both sexes mixed together, but one seldom sees two males close together though they may be only 50 or 100 yards apart. A rare exception to this is when two males are courting the same female. The drake is polygamous and does not confine himself to one female for long. During the breeding season, he gives an attractive courtship display. He arches his head and neck and raises the feathers of the crown, neck and body. The female is sometimes seen following the male, and *vice versa*, and copulation takes place in water. While courting, the birds fly from one part of the lake to another, diving and following each other. The Nukhta is a Goose-like bird and, though keeping close to water, strays a little to feed on grass, seeds and plants. It also alights on trees where it roosts. While flying at a distance, its black and white body readily identifies it. The call is a croak-like sound; the bird also emits a hiss, but I have never heard it call loudly as some observers have described. The Nukhta drake is usually a wary bird, resenting close approach except while feeding. In a background of aquatic plants and mud, the speckled head blends well and the bird is often overlooked. The flight is rather heavy but fast. During Winter, the Nukhta is not plentiful and only a few pairs are shot during large Duck shoots.

DISTRIBUTION. The whole of India and Saurashtra. Resident and local migrant, coming to breed during the Monsoon. From March to June, it is either uncommon or rare with us.

NESTING. Season—July to November, most birds laying in August and September, much depending upon favourable rains. Having commenced to lay, the Nukhta duck separates from the drake and brings up her progeny independently. The male, after mating with one female, soon seeks other females. The Nukhta duck lays in hollows of trees or holes in banks, or in old nests of large birds, and I have found eggs in cavities of ruined forts away from water. One nest was found in a hole of a dilapidated well, and on another occasion a Stork's nest was being utilised; this shows the variability of nest sites. The most popular one is a hollow in a branch or trunk of a tree. Once I was informed of a nest in a bed of reeds but I was unable to confirm it. After hatching, the young are led during the night to a suitable pond or lake in which there are many reeds. 12 to 20 eggs is the normal clutch, and I have never found more than that; they are ivory-white in colour and oval in shape. The egg-laying takes place on alternate days, and the

female is wary enough not to reveal her nest ; it is only by constantly watching her movements that the site can be discovered. After laying, the birds fly to their feeding grounds and spend the day at the waterside. Incubation takes 29 days. The female with young often leaves her progeny in order to divert approaching danger and will only return to them when she thinks it is safe. The Nukhta young are excellent divers.

FOOD. Aquatic plants, insects, seeds, grain and grass. The Nukhta feeds in muddy areas along shores, often straying into open fields and crops. It visits all likely waters, however small they may be, just before sunset and after, and before dawn, and returns to larger stretches of water for resting during hot hours. It seems to prefer a certain amount of seclusion.

PAINTED PARTRIDGE

Gujerati Name—Taliyō Tétar

Francolinus pictus LINNAEUS

See Coloured Plate 12.

SIZE. About that of a Pigeon.

IDENTIFICATION. Head and neck, chestnut and streaked with dark brown on the crown forming a blackish centre line; wings, barred with chestnut and brown; back, grey with numerous black bars; breast and lower-parts, whitish with conspicuous black markings which become smaller as they reach the base of the head; mantle, blackish-brown with each feather edged with fawn. At a distance and viewed from the front, the bird looks blackish-brown, and spotted on the under-parts. The legs are dull orange and without spurs. Sexes are alike but the upper tail-coverts in the male are finely barred black and white while in the female they are more mixed with khaki and do not show such a contrast in pattern. The 'Taliyō Tétar', or Painted Partridge, is found chiefly in grasslands or 'vids,' but it is also seen in 'wadis,' scrub jungle and forest. It has a liking for ant-hills and high places like tops of trees and telegraph posts on which it perches and calls, especially during the breeding season. This Partridge differs from the Common Partridge in being more of a solitary bird, crepuscular in habits and not so pugnacious. I have only once seen males sparring at each other. They have a call like *kik-kikiri* or *kik-kiri-kikari*. In flight, the blackish tail, dark upper tail-coverts and barred wings at once distinguish the bird from the Common Partridge.

NOTES. In connection with this bird, the word 'Partridge' is in truth a misnomer as the bird is a Francolin. Unlike the Common Partridge, the 'Painter' often keeps the tail erect, recalling a 'murghi' or fowl, during the

breeding season or when disturbed. The males call from their established posts almost the whole day long, and attract as many females as they can, although during the breeding season I have never seen more than one female at a time with the male. During the Monsoon, which is the breeding season, the Partridges call vigorously, and nearly every ant-hill in the area is occupied. I have counted half a dozen birds on telegraph posts, all calling with their heads held high. And I have come across as many as 15 birds, all males, in one small 'vid'. So absorbed is the cock bird while calling during the breeding season that he will allow close approach and one can pass him in a car at a few yards' distance. The female does not call and is much more silent, but I have sometimes heard her emit a shrill *kirr*, not unlike a Shrike. The call of this Partridge is rather attractive and can be heard at a great distance. I have heard this species and the following one calling on moonlight nights. When disturbed, it often erects its crest-feathers and, when chased by Hawks, flies low, zigzagging to shake off the pursuer, and sometimes emits a harsh call but does not give out a death cry as does the Common Partridge. 'The Painter' often mixes with the Common Partridge but is much more of a skulker and a grassland bird. At night, it roosts in trees and high hedges, and on the ground in open grassland. In 'vids,' it is often preyed upon by Hawks and cats during Winter. But where there are sugar-cane fields and 'Bordi' (*Zizyphus*) bushes, it is fairly safe. During the cold season it is found commonly in 'shedhas' and near 'khalavads'. It can be a very elusive bird, creeping through grass and disappearing from view within a very short time. During the breeding season, pairs are sometimes seen together.

DISTRIBUTION. Most parts of India including Gujerat and the whole of Saurashtra. Resident wherever found. Absent in Kutch.

NESTING. Season—May to October; generally, after the rains break. The nest is a depression on the ground, in grass or Jowar or Bajri crops, and it is difficult to find. Five to eight eggs are laid. They are white with a tinge of green.

FOOD. Insects, grain, seeds, vegetable sprouts and grasses. But I have found the birds feeding on black ants, termites, grasshoppers, and 'Bor' fruit (berries of *Zizyphus*) as well. They are not gregarious like the Common Partridge, but I have seen them in fair numbers where food was plentiful. They are often seen in pairs during Winter amidst sugar-cane or 'Bordi' bushes full of fruit. They feed very early in the morning and often after sunset.

COMMON GREY PARTRIDGE OR FRANCOLIN

Gujerati Name—Khadyō Tétar

Francolinus pondicerianus GMELIN

See Coloured Plate 12.

SIZE. About that of a Pigeon.

IDENTIFICATION. Upper-parts, light reddish-brown with light dust-coloured transverse stripes giving an effect of brown squares; head, greyish-brown, the forehead being more reddish; a patch of yellow clay colour, bordered by a black line, on the throat; whole of under-parts, greyish and barred with brownish-black; under tail-coverts, dull yellow clay colour; tail, reddish-brown and tipped with black; wings, plain light brown; eyes, dark brown; legs, reddish-pink. If birds have had dust baths, the reddish-brown colour is subdued or pronounced, depending upon the type of soil. The male has one sharp spur on each leg which is used for fighting. He is slightly larger in size than the female.

This bird is one of our commonest Game Birds, being found in jungle, 'wadis', low thorny scrub and grassland. It enters gardens and crops readily. It is often seen on the roads in pairs or in small coveys of five or more birds. In the countryside it is heard everywhere, especially near hedges and cultivation. The call is a *pakdilio pakdilio*, often repeated. Then there is a short call of the male like a whistle, viz., *chook chook*, which is heard at intervals. Sometimes, the female participates in the male's call. There is another grunt-like note, viz., *key-kup*, used for calling each other, and heard especially during the breeding season. This Partridge can run fast, and often does so when trying to escape, using its wings only when necessary. The flight is short, for a hundred yards or so; the wing-beat is rapid, but if the bird goes further, it makes a few glides in between and may often alight suddenly, beating its wings to break speed. Strong birds will get up with a whirr of wings. When hard pressed by Hawks, the bird emits a shrill *kirrr*; the same note is given in alarm. A shrill death cry is heard when it is caught by a Hawk. Although this Partridge is a ground bird, it takes readily to trees; in fact, it invariably roosts on trees or in hedges. In flight, it is recognised by its chestnut or reddish-brown tail-feathers.

NOTES. It is a hardy Game Bird and is known to remain without water for a long time. On account of its excellent meat it is much persecuted. It affords sport to shikaries while falconers train Hawks to catch it. During the breeding season, the males fight vigorously. Many bird fanciers keep them for their fighting quality and large bets are won and lost over them. The males can be tamed and made to follow at liberty if properly trained.

DISTRIBUTION. Most parts of India including Gujerat, Kutch and Saurashtra. Resident wherever found.

NESTING. Season—February to June; the principal months are March to May. Odd pairs are known to breed after the rains and during Winter. The nest is a scrape on the ground, placed under some shelter, thorny bush, rock or hedge. The eggs number 5—10, usually about 7. They appear like miniature fowls' eggs but are slightly more pointed and of a light creamy colour.

FOOD. Insects, berries, grain and sprouts of green plants. They are often seen feeding in 'khalavads', 'wadis' and thorny scrub. Termites seem to be a favourite food, and so also the insects found in dung.

COMMON OR GREY QUAIL

Gujerati Name—Ghāghas Batēr

Coturnix coturnix coturnix LINNAEUS

See Coloured Plate 12.

SIZE. About that of a fortnight-old domestic chicken.

IDENTIFICATION. A plump bird with short wings and a stumpy tail. Its colour is like that of dry grass, and it has dark brown stripes on the upper-parts; the lower-parts are dirty-white to pale buff. In the male, the breast is of a warm buff colour; the head, seen from close quarters, is striped on the crown and the cheeks are white with two crescent shaped black streaks on each side. The bill is very short and the legs are fairly short and fleshy. The female is, on the average, larger and can be distinguished by the small spots on her breast. A specimen in hand can be separated from the Rain Quail by noting the outer-webs of the primaries which are barred with buff.

NOTES. Quails camouflage well on short grass and can rarely be seen except in bare ground. They are, however, flushed at close quarters from the grass or standing crops. As they rise, they emit a sharp whistle, *weee*, and a harsh *truck* emitted in full flight. The flight is straight. Owing to their obliterative colouration, they are usually seen only while flying or running to seek cover. The call is a mellow but resonant *whit-whit* and *whit-whitack* and *van-van* pronounced like the French word 'vingt'. With these birds, the call is of vital importance, for large numbers gather where a male, which is known as a 'call-master', is calling; this attracts other Quails to the best feeding area. On account of this trait, shikaries catch male birds and then stimulate them to call. A several thousand may thus be attracted by the 'call-masters', known as 'Bolārās', and trapped in large nets during the migratory season. The general migration period commences from October to December, and they return in March. Local migrants may be heard calling in August, the time when they breed with us.

The Quail is excellent for the table and, therefore, many are caught and shot. The migration is in full swing between October and January. The birds are seen on the coastline, coming from the sea and landing on the shore. In such large numbers do they come that it appears as if there was a Quail-storm. The migration takes place by night and many birds are seen arriving just before dawn. Leader birds, which appear to be 'call-masters' also, land first and summon others by calling. The Common Quail provides food for every predator, bird or animal. It attracts many Hawks, especially the Harrier, the Peregrine and the Sparrow-Hawk, which feed upon it regularly and seem to follow the migration. The birds afford excellent shooting. They occur in larger numbers on the coastal belt than inland. In October, the migration is already in full swing and I have noticed them arriving with regularity from the 1st to 15th October every year. As the crops are harvested, they begin to emigrate to fresh feeding grounds and suitable cover. So, during the Winter months, most of the birds are seen in chilli fields and grasslands. Sometimes, the return migration takes place as late as April, but in smaller numbers, as cover and food are scarce then.

DISTRIBUTION. A migrant in most parts of India including Kutch and Gujerat, but the bird has been recorded breeding in certain parts of the country. It is a post-Monsoon migrant into Saurashtra, remaining with us throughout Winter up to March and April when the return migration occurs. Some pairs breed sporadically in certain parts of Saurashtra. I have one record of a clutch of ten eggs found at Hoidad, 15 miles away from Bhavnagar. I have also heard the birds calling during the Monsoon from June to August and have often suspected them of breeding in the area where they were heard.

NESTING. Season—June to September. The eggs number six to fourteen, and are much like those of the Rain Quail but larger and more yellowish, blotched with brown. The nest is situated on the ground in grass.

FOOD. It feeds on small grain, vegetable seeds, grass and insects. Food is a very important factor in the movements of these Quails. Hundreds may be seen where food and cover are plentiful.

BLACK-BREASTED OR RAIN QUAIL

Gujerati Name—Chinagā Baṭēr

Coturnix coromandelica GMELIN

See Coloured Plate 12.

SIZE. Slightly smaller than the Grey Quail.

IDENTIFICATION. In the male, the upper-parts are striped with brown and pale fawn; face, whitish and barred with black; lower-parts, pale buffy-cream, with warm buffy flanks conspicuously streaked with black; legs, fleshy; a large patch of black on the breast which clearly distinguishes the male from the female. The female resembles the female of the Common Quail but is smaller, and, in hand, she is separated by the absence of the barrings on the outer-webs of the primaries, a characteristic which is found in both sexes.

NOTES. The Rain Quail camouflages itself in its background of dry grass, stubble or stony ground in such a perfect manner that it cannot be seen until it flies. This is also the case in short green grass on stony hills. In this type of country, my friend, R. K. Chandrabhanusinhji of Wankaner and I flushed as many as 150 birds in a few miles' walk during the Monsoon at Wankaner. The birds lie close in grass, crops of all kinds and fields studded with bushes. During the Monsoon, the Rain Quail is heard everywhere, and particularly the first rainfall brings many Quails which, as soon as they arrive, start calling. These calls may be heard at any time during the day, and also at night. The call is a two-syllabled whistle, *whit-whit*, repeated for nearly 15 seconds or more, which is sharper than that of the Common Quail. At this time the birds may be seen in pairs, the male following the female and chasing her about from one place to another while flying. They are fairly active until the grass is too long or when the hen commences to incubate. They seem to prefer short grass where they can move about without difficulty while feeding. At the breeding season, males can be heard calling vigorously, challenging rival birds. This Quail can be caught in nets in a similar manner to that by which the Common Quail is captured. Like the last species, it makes excellent eating and affords good shooting, but it is not as abundant after the rains. This bird and the Common Quail are caught by many Birds of Prey during the cold weather, but this does not seem to affect the large numbers which we see each year in the fields. Migration takes place by night and it is, therefore, difficult to estimate the number of birds which come and go from time to time except by walking through fields in a regular beat. Even then, many birds remain hidden in cover. The flight is straight and the bird gets away fairly fast, often emitting a short whistle-like call and a *terek*. During the Winter months, they rise from cover in bevvies of four to five birds at a time, and may be found together with the Common Quail in the same type of cover. At this time they rarely call, and the numbers decrease

as the warm weather approaches. Although, it is a resident bird with us, the Rain Quail is much prone to local movements, and an area may be quite conspicuously devoid of these birds at one particular time while at others they may be seen in fairly large numbers. These local migrations are influenced by food, cover and weather conditions.

DISTRIBUTION. Fairly common all over India including Kutch, Gujerat and the whole of Saurashtra. Resident and locally migratory.

NESTING. Season—July to November, most birds nesting in August and September. The nest is made on the ground, and is placed in short grass or crops. Five to twelve eggs are laid; they are of yellowish-stone colour, splashed or blotched with brown. The nest is a mere depression in the ground and the grass pressed in a circular fashion. The hen, which incubates alone, lies close and is only flushed if stepped on. The eggs are hard to find. During and soon after the rains, the birds are found in pairs, and the male still continues calling while the female is generally close by or on the nest. The young birds are recognised in flight by their darker upper-parts.

FOOD. Mostly seeds, grain, grasses and insects.

JUNGLE BUSH-QUAIL

Gujerati Name—Vana Lāvāri or Vana Bhaḍakiyūn

Perdicula asiatica LATHAM

See Coloured Plate 12.

SIZE. About that of the Rain Quail.

IDENTIFICATION. This Quail is almost identical with the Rock Bush-Quail but is distinguished by the following characteristics: it has a broad and conspicuous cream-coloured supercilium, often mixed with reddish-brown, and a similar streak under the eyes; the upper-parts are broadly striped with straw-yellow; the face and throat are of a rich reddish-chestnut colour. In the male, the lower-parts are barred with blackish-grey while in the female they are of reddish vinous-pink or rich buffy colour; the legs are paler and less orange than those of the Rock Bush-Quail. Otherwise, the two birds are the same in habits. The call, if anything, is softer and shriller. This is purely a forest bird.

NOTES. In Saurashtra, I have only seen it in the Gir area which it does not seem to leave. There it hides under fallen teak leaves and is difficult to see, once it crouches. However, the birds come out on roads and paths frequently to take dust baths; when threatened while doing so, they have a habit of clustering

together and crouching motionless with their heads pointing outwards. When approached closely the covey suddenly fly with a whirr in all directions. The early morning or the late evening is the best time to find them. I have seen as many as 30 to 40 birds in a group.

DISTRIBUTION. Forested areas of India including those of Gujerat. In Saurashtra, they are found in the Gir Forest. The two races of Bush-Quail are met with on the outskirts of the Gir. Resident and fairly common (See Distribution Map 16).

NESTING. The nesting habits are similar to those of the Rock Bush-Quail. Five to seven eggs form the normal clutch.

FOOD. Mostly seeds, grasses and insects. The bird prefers to feed amongst fallen leaves.

ROCK BUSH-QUAIL

Gujerati Name—Lāvari or Bhaḍakiyūn

Perdicula argoondah SYKES

See Coloured Plate 12.

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SIZE. About that of the Rain Quail.

IDENTIFICATION. The male is distinguished from the female in having light grey lower-parts which are barred blackish. The barring in many birds exists on the upper-parts, also. The female has plain buff lower-parts and the reddish-chestnut throat is absent. The upper-parts of the male, which are brown, often have blackish feathers. The plumage varies on the upper-parts: either uniformly coloured or mottled. A cream-coloured supercilium is present. The bill is short and the legs are orange. These Quails are found in dry, rocky, and arid scrub country, flat as well as hilly, where there is plenty of grass and small thorny bushes. But they also enter thin deciduous forest.

NOTES. They are very active birds, running along in single file with the leading bird whistling to those that have been left behind or separated. The birds respond by whistling to each other. They generally prefer to escape by running, but once they have decided to crouch, they will only get up when nearly stepped upon. I once picked up with my hand a bird which had been frightened by a Hawk. These Quails harmonise with rocky ground in perfect manner until flushed from under one's feet; they literally explode with a whirr in all directions, scaring and leaving one in utter amazement. They are a great nuisance while one is stalking Big Game. I well recollect seeing a panther surprised at a covey

of these birds it had flushed while stalking. They are seen in groups of 8 to 20, running from one bush to another, and calling in a soft continuous whistle, e.g., *pee-pee-pee-pee-pee*. They also have another harsh call which is a challenge, viz., *vanchee vanchee* which changes into *cheevan cheevan* and which sounds from a distance like the sawing of wood; the 'van' is pronounced like the French word 'vingt'. The male bird often stretches himself up, and then begins to call. When flushed, the birds fly off in all directions with a whirr and drop not very far away, sometimes gliding with wings spread-out. They fly rapidly and usually down wind. In their natural habitat of grassy hills and scrub country, it is pleasant to see them on the roads or paths taking dust baths. They make excellent eating, much like young Partridges. Birds of Prey, e.g., Harriers, Buzzards, Shikras, Sparrow-Hawks and Eagles, subsist on them during the Winter months.

DISTRIBUTION. Most parts of arid India including Kutch, Gujerat and the whole of Saurashtra. Resident and common. The bird is found on the outskirts of the Gir, but does not enter the habitat of the Jungle Bush-Quail. The two species are, however, found side by side.

NESTING. Season—Almost throughout the year, mostly from February to May and again from August to November. During the breeding season, two males may often be seen courting one female. The courtship is interesting. The male raises the feathers of the upper-parts, compressing his body on the side on which the hen bird is standing, and then courts her. When a male is seen singly it usually means that the female is incubating; 5 to 8 creamy to buffy-white eggs are laid. The nest is placed on the ground under a bush or in grass usually under a tuft. In light scrub jungle, I have seen the nest under the protection of dry leaves. The incubation period is 13 days. Once the chicks are hatched, the male joins the family. Downy chicks are striped reddish-brown and fawn.

FOOD. Mostly seeds, grain, grasses and insects.

COMMON PEAFOWL

Gujerati Name—Mor ♂ Dhél ♀

Pavo cristatus LINNAEUS

See Coloured Plate 20 and Plate 37.

SIZE. About that of the Vulture excluding the train of the cock.

IDENTIFICATION. Too well known for a detailed description. In general, a bird with a beautiful crest consisting of a row of small feathers on the crown, and a bright blue neck and breast. Upper-parts, barred; wing-quills, chestnut;

upper tail-coverts, known as the train and wrongly called the tail, form a group of long beautiful ocellated feathers. Legs, dust-grey or blackish, with a spur in the male. The female does not possess the bright blue neck nor the long train; the upper-parts are pale brown.

NOTES. This is one of the commonest of our large birds, and is considered sacred all over Saurashtra. Perhaps it is not generally realised that the bird has been saved from extinction owing to the belief in its sanctity, because in many parts of India where it is not held sacred and where it was formerly plentiful, it is now rare and being extirpated. The gorgeous ocellated upper tail-coverts can be erected like a fan, whereas the actual tail is of a sombre brownish colour which serves to keep the train-feathers from falling backwards. The train is usually complete in May and displayed throughout the breeding season. The feathers are shed from September onwards. Young Peacocks a year old do not assume their full dress and have only a part of their breast blue. However, young birds from a very early age begin displaying their rectrices and upper tail-coverts. The full plumage is assumed in the fourth year. The Peacock is heard mostly during the breeding season when it emits piercing shrieks which are prompted by the sound of thunder; in fact, any loud noise stimulates the Peacock to call. There are a number of notes, the common ones being a loud *peauk* and a *dhank-peauk*, and, also, an alarm call which is given out as the bird flies, viz., *kök-kök-kök-kök-kök*. There is still another call, a single *dhank*, which is repeated at intervals and is a warning of danger; this is usually emitted when the bird is on the ground. The last two calls are often heard when it has either seen wild cats, leopards or Eagles, or been flushed by them. Peacocks suffer from sore throats during the breeding season and the call is, therefore, rather hoarse. I have heard them calling at night. The Peafowl has a highly developed power of hearing and an excellent eye-sight, and because it is thus gifted, it is rarely caught by its enemies. However, where it is hunted, Man is its greatest foe. These birds mate in the normal way, and the belief among the uninitiated that the hen conceives by catching the tears falling from the cock's eyes while he is dancing is totally erroneous. When copulating, the Peacock depresses his train which is kept partly open. While displaying to a female, he often rushes to her, emitting a loud but short call, e.g., *kaon*, after which copulation may occur. In excitement during the display, he shakes his train-feathers, making a rustling sound. He also calls in harsh piercing notes, *kain-kain-kain-kain*. The wings are also kept constantly moving at the sides. Again, he has his favourite sites for the display, e.g., along a hedge, close to a wall, or in some open space which he visits regularly, especially during the early morning. The males are pugnacious and often fight during the breeding season. While displaying, the birds in forested areas do not tolerate close approach, but those seen close to villages keep on displaying and allow an

approach even upto 20 yards. The display may take place independently of any female, and I have often seen a Peacock displaying to a Myna or any other bird when it alights close enough. At night, these birds roost on tall trees, houses, other high structures, etc. In Saurashtra where they go almost unmolested, they appear semi-domesticated.

DISTRIBUTION. All over India and Saurashtra. Common and resident.

NESTING. Season—June to October, much depending on the rains. However, the principal months are July and August. The nest is a depression usually in grass, but birds in a semi-domesticated state lay on tops of buildings or bowers in gardens. In forest and scrub jungle, they lay in long grass. I have found them nesting in old Stork-nests fairly high up on trees. On the ground, the hen makes a scraping and lays a normal clutch of five eggs, but sometimes they range from three to seven. However, a nest which I found at Wankaner contained as many as twenty-one eggs. But this large clutch must have been the result of three or more hens laying in the same nest. The eggs are a light buff colour, often stained while being incubated. Those that have blood marks on them are laid by young hens. The male is polygamous and does not assist in incubation in any way or show any parental care. The female sits close and, once alarmed, becomes wary. When the chicks have hatched, she emits a short drum-like sound, like a *dukh dukh*, with the neck-feathers puffed out. And to distract the attention of predators from the chicks, she flaps her wings from time to time, often leaving the chicks. Not all the young survive; predators take their toll because the growing period is fairly long. Sometimes hens are killed by wild cats while incubating. The half-grown chicks emit a call reminiscent of the Brahminy Duck while migrating. Juvenile Peacocks often try their hand at displaying just in the manner of an adult, which make them appear rather ridiculous.

FOOD. Mostly grass, grain, insects, young vegetable sprouts and small reptiles. When the Peafowl is on the increase, it becomes a great nuisance to farmers.

PIED CRESTED CUCKOO

Gujerati Name—Motiḍō

Clamator jacobinus BODDAERT

See Coloured Plate 23.

SIZE. About that of the Myna but with much longer tail.

IDENTIFICATION. A black and white bird with a crest and a long tail. Easily recognised by a white patch on the wings, the tail being tipped white.

Bill, black; eyes, brown; legs, slate-grey. While flying, the white patches on the wings are conspicuous, the tail-tips forming a white rim. This Cuckoo is found in wooded as well as open country studded with trees. I have seen it in arid low scrub jungle where the bushes were not taller than six feet. It generally prefers gardens and wooded areas. The bird is a local migrant coming from the North-East and the East during the hot months of May and June, and spreading out into the Peninsula. Some birds resort to the Gir Forest during the non-breeding season. During the Monsoon, they are fairly common everywhere. This bird is not very shy and often allows close approach. The call is a short whistle like *pi-ook*. It also emits a sharp high pitched chatter. The young are brown and white, and may be seen from August onwards. The majority of birds breed after the first rains, unlike the Hawk-Cuckoo which often breeds during the hot months. It is, therefore, a typical Monsoon bird. Seen singly or in pairs. Sexes alike.

NOTES. During May and June, these birds are seen migrating during the day and at dusk, flying south and south-westward at a fair height. One can plainly hear their plaintive calls like *pi-ook* as they fly overhead. These characteristic calls are even heard on moonlight nights during their migratory period which lasts for a few weeks over an area. The flight is fairly swift but I have seen wild Merlins successfully catching them after strained 'ringing' flights. These birds are much influenced by rainfall, and are found breeding earlier at one place than at another on account of the vagaries of rainfall. They readily breed where they can find their foster parents, the Babblers. Soon after 'Divali', the birds disappear and are rarely seen during the Winter or Spring months. Young and old birds may be found close to each other in 'Babul' thickets.

DISTRIBUTION. Most parts of India, including Kutch and Gujerat and almost throughout Saurashtra. Common from June to October. Local migrants and breeding with us.

NESTING. Season—June to October, most birds laying in July and August, and even in September. I have seen them in the most arid parts of Saurashtra during the breeding season as well as in cultivated and forest areas. No nest is made and, like other Cuckoos, they lay their eggs in other birds' nests, and usually choose those of the Common Babbler. The eggs resemble those of the foster birds in being blue, but are larger. They are also known to lay in the nests of other Babblers. I have seen this Cuckoo hunting in 'Kerada' (*Capparis*) bushes, looking for nests. And I once saw a Cuckoo making vain attempts to flush a Common Babbler off its nest by spreading out its tail and wing feathers and wildly searching to find an entrance into the bush. She went round and round the bush but, failing to find an entrance, finally flew away in search of another nest. The 'Kerada' bushes are very closely interlaced with thorny

branches in which the Common Babbler often breeds. In the semi-desert of North-Western Saurashtra, the Common Babbler breeds in 'Jeepta' bushes.

FOOD. Insects and fruit.

COMMON HAWK-CUCKOO

Gujerati Name—Buppaiyō

Cuculus varius VAHL

See Coloured Plate 13.

SIZE. Same as the Cuckoo.

IDENTIFICATION. Upper-parts, grey; neck, brownish-pepper or light fulvous colour; lower-parts, whitish and barred with grey and brown. Eyes, orange-yellow, but grey in young birds; legs, bright yellow. Bill, greenish in colour, thin and like that of a Koel, and not at all like the strong hooked bill of a Hawk. However, the bird gives a vivid impression of the Shikra. In flight it resembles the Shikra but is distinguished by its sharply pointed wings and by the brown colour on the neck, the bill being slender and kept in line with the neck when flying. While at rest, it is distinguished by its short legs and the yellow rims round the eyes. It is a shy bird keeping to well-foliaged trees. When closely approached, it suddenly flies out only to settle on another green tree. It frequents gardens and jungles, being more often heard than seen during the Monsoon. It calls during daytime and at night. Sexes alike.

NOTES. On account of its sudden appearance during the Monsoon and penetrating plaintive calls, Indian poets have written romantic legends about it, always depicting it as thirsting for love and water.

Some birds arrive earlier than others, in May and June, but most of them do so after the first rains. The voice varies; the common call resembles *pi-piasa*, and another one is a crescendo of notes which starts at a low pitch and reaches a high one concluding with a succession of *pi-piasa* which often has an abrupt ending. At other times, the bird gives out some loud shrieks and whistles. The flight is low, either under the tree or just over the top. This bird is likely to be found in the Gir Forest throughout the year. It is silent during the non-breeding season.

DISTRIBUTION. The whole of India and Saurashtra. Resident in well-wooded areas, but locally migratory elsewhere. Birds in the Gir Forest are resident and call earlier, from April to May. In other parts of Saurashtra, only a few birds are seen in May, the rest arriving immediately after the first rainfall when they come into breeding condition.

NESTING. Season—May to August. The bird lays its eggs in the nests of the Grey and Common Babblers and perhaps in those of some other species, too. In places where these two species are not found, it lays in the Jungle Babbler's nest. In short, the majority of its eggs are laid in Babblers' nests. The eggs are blue, matching those of the Babblers. However, a particular pair of Hawk-Cuckoos may lay another type of egg, matching those of the foster bird on which it is parasitic. In some species of Cuckoos, we find a variety of coloured eggs which are similar to or are almost replicas of the foster parents' eggs. In the European Cuckoo, a diversity in the types of eggs is noticed. When Cuckoos lay eggs in small birds' nests, the discrepancy in size is evident, and the foster parents will not always continue incubating them. However, colour plays an important part and resemblance of colour to the foster parents' eggs appears to be the deciding factor. It has not been adequately proved how the Cuckoo lays her eggs. Some authorities say that the bird carries the egg in the mouth and deposits it in the nest; others say that it lays in the nest. This is a very interesting problem to study. Where the nest is open and large enough, the bird lays by squatting over the nest, but in cases where the entrance hole is very small and where there is no room for the bird to alight on, and in cases where the entrance hole is at the side, it would be interesting to know how the bird deposits its eggs. Mr. E. C. Stuart-Baker has made an interesting study in his book, "Cuckoo Problems". The Cuckoo nestlings are larger than the young of the foster birds and the former soon try to eject the rightful owners from the nest. This method of ejecting the young applies to some Cuckoos only. A newly hatched European Cuckoo will push or eject the remaining eggs out of the nest. In case where it cannot manage to eject the young, it reaches forward with its wide mouth and takes the food from the ignorant foster parents and thus starves the legitimate young to death, and the young Cuckoo thus grows up with plenty of food. It is amazing how the foster parents will still continue to feed the young Cuckoo, even after leaving the nest, when the latter is double the size of the former.

FOOD. Fruit and insects, especially caterpillars.

CUCKOO

Gujerati Name—Pardéshi Kūkanṭh

Cuculus canorus LINNAEUS

See Coloured Plate 23.

SIZE. About that of the Pigeon, but more slender and with proportionately longer tail.

IDENTIFICATION. Upper-parts, grey; lower-parts, white with brownish-grey bars. Bill, brown; eyes, legs and gape, yellow. The bird resembles the Hawk-Cuckoo but differs in being greyer and slimmer, having sharply pointed wings. Most of these birds are seen from August to November and are then fairly common. They are also found throughout the Winter months in small numbers, and sometimes during Summer, also. The Cuckoo is a shy bird, taking wing on the slightest approach. It is seen all over the countryside, in forests and on the edges of scrub jungle or woodland. The call is a resounding *cook-koo* in two syllables and can be heard a long distance away. It is seldom heard, however, during migration. The species is distinguished from the Indian Cuckoo by the absence of the black sub-terminal band on the tail and by its double syllabled call instead of the longer *bok-kata-ko*.

NOTES. The Cuckoo is parasitic on other birds but it appears not to breed with us though I have suspected it to be parasitic on Pipits and Larks. But I have no evidence to vouch for it. The birds may be seen in fairly large numbers during the post-Monsoon or harvest season, but they again disappear for a short period. The flight is uneven and they turn in air swiftly and with ease, their long and sharply cut wings giving them a Hawk-like appearance. They fly low, sometimes close to the ground or just over the fields or forests. Sudden stormy weather seems to bring these birds into prominence.

DISTRIBUTION. Europe and Northern Asia and migrating south into tropical regions. Mostly migratory in Saurashtra, Gujerat and Kutch, and common from August to November. Rarely seen or heard in April and May.

NESTING. I have no authentic records of its breeding with us, though I have sometimes heard it calling during Summer.

FOOD. Insects, particularly caterpillars.

KOEL

Gujerati Name—Kōyal

Eudynamys scolopacea scolopacea LINNAEUS

See Coloured Plate 13.

SIZE. About that of the House Crow, but more slender and with a proportionately longer tail.

IDENTIFICATION. Male: The whole bird is black with a bluish gloss when seen in the sun. It has a long tail, short legs and a slightly curved bill. Eyes, scarlet; bill, white with a greenish tinge; legs, greenish-blue. It has a well-known song or call which is considered to be melodious. It sounds like *koo-oo-yoo koo-oo-yoo*. The female is dirty white and barred with broad stripes of brown to blackish-brown, and has a brownish bill and scarlet eyes. She has a short call which she emits as she flies, and has a variety of squealing notes which are generally heard during the breeding season; otherwise, she is mostly silent. She varies in colour from dark to light brown, and is heavily or lightly marked with blackish-brown. The young Koel has brown eyes which turn to yellow as it grows older, finally assuming a red colour.

NOTES. It is interesting to note that the Indian poets, modern as well as ancient, have always alluded to the female Koel as having a melodious song while, in fact, it is the male who possesses this quality. The Koel is supposed to commence his song during the 'Vasant' season, or Springtime, and, therefore, it is connected by the poets with the blooming of flowers of variegated hues. This season is considered romantic and beautiful, and the Koel is supposed to add charm and music to it. The Koel is a bird of gardens and trees; it is found in the countryside also but it is much more common in gardens than in the jungle. It is always associated during the breeding season with the Crow on whom it is parasitic. The flight is low and straight, and the short wings make the tail appear longer. The Koel is promiscuous, the female mating with any available male during the breeding season. At times, the male may be heard calling while fluttering his wings in flight.

DISTRIBUTION. Practically the whole of India and Saurashtra.

NESTING. Like the Cuckoos, it does not make any nest but lays its eggs in the Crow's nest. The breeding season coincides with that of the House Crow, i.e., April to August. The Koel generally lays in the nests of House Crows and rarely in those of Jungle Crows. This it does very cunningly, and the male is supposed to help the female. When a Crow has built its nest and is about to lay eggs, a pair of Koels keeps the nest in view until the female Crow has laid. Then, the male Koel harasses the Crows by approaching close to the nest. The female Koel slips into the nest and lays her eggs while the Crows chase

the male. However, this ruse does not always work and often the female is caught when attempting to get into the nest. There is then a lot of squealing but the female always escapes after having some feathers plucked off. She is faster than the Crow in straight flight. Nevertheless, I have observed that the female Koel often attempts to lay her eggs without the aid of the male. I have seen Crows chasing female Koels out of a tree while the male remained unmolested, and yet I have seen a pair of Crows chasing a male Koel while the female entered the nest. I once suspected two females having helped each other to lay in a Crow's nest, although I could not verify this by complete evidence. There is, however, no doubt that the female Koel is looked upon more suspiciously by Crows than the male. There are more chances of the Koel laying her eggs in the Crow's nest while the Crow is still laying her eggs, or when she has just completed her clutch for, after the full clutch is laid and incubation has advanced, the pair of Crows keeps a vigilant guard and is less likely to leave the eggs unattended. Perhaps, there is not one particular method or ruse adopted in cheating the Crow. However, there is no doubt that the female is always watching for an opportunity, and lingering in the proximity of the Crow's nest in which she intends to lay. The eggs of the Koel are smaller than those of Crows. In colour, they differ in being more greenish and streaked with brown, and can be distinguished from the Crow's eggs by being rounder. The Koel's eggs hatch earlier than the Crow's and so the young Koel has the advantage of taking all the food from the foster parents, thus starving the legitimate young to death. However, this is not always the case for, I have seen both young Koels and young Crows growing up together. I have also seen two to three eggs of the Koel in a Crow's nest. Thus the Koel checks the increase of Crows which would otherwise reach large numbers. The young Koels are fed on insect and meat food, and when they have attained full size, they emit a squealing noise which discloses their identity, and the Crows then learn that they have been cheated by the Koels. But it is then too late, and the young Koels fly away to safety with the Crows after them. Nestling Koels are black and have a reddish gape. During the breeding season, Koels do not live in pairs but mate with any bird, and are rather promiscuous in their sexual relationship. The males are often seen chasing the females, after which the mating takes place.

FOOD. Mostly fruit, such as Ficus, 'Bōrsali' and other wild varieties. The bird also readily enters fruit orchards of mulberry, grapes, papayas and berries of various kinds. It does considerable harm to fruit gardens but checks the increase of Crows to some extent. I have seen it eat insects.

CROW-PHEASANT OR COUCAL

Gujerati Name—Hokkō or Ghōyarō

Centropus sinensis STEPHENS

See Coloured Plate 13.

SIZE. Larger than the House Crow.

IDENTIFICATION. Body, head, legs and tail, black with an inky-blue tinge. Wings, chestnut. Bill, hooked. Tail, long, being wider at the terminal half. The eyes are bright blood-red like those of a Koel. The legs, which are fairly long, make it easy for the bird to walk; nevertheless, it appears very stiff, swaying its shoulders at each step. The tail is sometimes spread-out and waved up and down. This bird is one of our common garden birds which is also found in jungle, plantations and wherever there are trees, water and a fair amount of underbush. It seeks its food on the ground, keeping its head high as it walks, but it is not much of a runner like the 'Sirkeer,' and takes to wing and flies sluggishly to a nearby tree. The flight is clumsy and consists of flaps followed by a glide as it flies from tree to tree. It prefers the topmost branches up which it climbs on approach. When closely approached, it flies to another tree as a last resort. At times, however, it slinks into bushes where there is undergrowth. The call varies, the common one being a *hook-hook-hook-hook*, repeated continuously and from which it derives its Indian name of 'Hokkō'. I have often imitated this sound during the breeding season and have brought the birds fairly close. They are pugnacious but never seem to have much courage. They emit another funny sound like the air escaping from a motor tyre or like the hiss of a large cobra. Sexes alike.

NOTES. These birds are seen singly or in pairs and are not really shy. The common belief is that their meat is good for asthmatics. Nearly every garden attracts a bird or two.

DISTRIBUTION. Most parts of India and the whole of Saurashtra except the desert tracts. Resident. Fairly common where there is some greenery. Introduced into Kutch from Jamnagar.

NESTING. The main season is from May to September, most birds laying after the rains have begun, i.e., about July and August, but I have collected eggs in February and March also. The nests are made of sticks and lined with leaves. They are of two kinds: (1) Circular, open at the top and lined with leaves like that of a Crow; (2) larger, and like a football in shape with a fairly large entrance on the side. The site is usually an evergreen bush or tree. I have seen nests made into a round ball out of a mass of leaves generally picked from the same trees on which the nests were built; and yet I have seen the birds taking nesting material from a distance and flying from one tree to another

until the nest was reached. The nests are placed sometimes as low as three feet, but most of them are out of reach. The structure is large and can be spotted fairly easily when near, but when placed in thick foliated trees, it is well-hidden from sight. The eggs, which vary in size, number three to five and are off-white and round.

FOOD. Insects, mice, toads and small reptiles. The Crow-Pheasant is supposed to destroy the eggs and young of birds, but I have never seen this myself though it is quite probable. It does not appear to be a very harmful bird though there is much difference of opinion about this. I have had under observation many nests of other birds in my garden in which there were eggs and the young, but none were destroyed by a pair which regularly visited the garden and finally nested in it. The destruction of eggs in my garden was the work of a pair of Tree Pies. While searching for its food in the grass, the Crow-Pheasant often spreads its wings and raises its tail in order to flush insects. On trees it readily picks up large insects and caterpillars.

SIRKEER CUCKOO

Gujerati Name—Sirkeer or Khākhi Ghōyarō

Taccocua leschenaulti LESSON

See Coloured Plate 13 and Plate 37.

SIZE. About that of the House Crow, but more slender and with a proportionately longer and heavier tail.

IDENTIFICATION. A typical khaki coloured bird with a long tail, and a crimson-red bill which is slightly hooked and tipped yellow. Eyes, black to reddish-brown in some birds, brown in the young and grey in the nestlings. When seen closely, the eyes have long eyelashes, much like those of human beings. The central tail-feathers are uniform khaki while those on the sides are broadly tipped white with black bases. Lower-parts, more reddish-brown. Almost all the feathers have stiff hair-like shafts. Young birds do not have bright red bill, and the hooked upper-mandible is less conspicuous. Legs, lead-grey. This is a bird of forest and scrub jungle mixed with grassland. It is sometimes seen entering gardens. It prefers plenty of undergrowth under which it runs along rather like a four-footed animal than a bird, and is reluctant to fly if it can escape by running. It is often seen perched on low bushes or leafless trees, sunning itself in the cold mornings. In open grasslands studded with trees, and in scrub jungle, it keeps to higher ground. It usually behaves in a shy manner resenting close approach, and yet I have been allowed to approach

closely by some birds without their showing any sign of fear. It is undoubtedly more sluggish during Winter. On the whole, it prefers seclusion and is usually a very silent bird. Its rather sharp call is heard during the breeding season; it sounds like a *which-which*, much like that of the Yellow-fronted Pied Woodpecker but louder. However, it has another courtship call which is rather prolonged, e.g., *pit-pit-pit-pitchurrr pitchurrr*, reminiscent of the Indian Nightjar. It is a skulker, moving quickly away out of sight, and is seldom seen in pairs except during the breeding season. Sexes alike.

NOTES. Matching with the ground and inclined to be secretive in its habits, the bird is often overlooked. Grassy hills studded with trees are its typical environments. I have also found it partial to 'Babul' thickets with grass cover. The birds seem to keep to a particular area for a long time, and to breed in the same neighbourhood year after year, if undisturbed. They sometimes nest by the roadside, and the young are fed to a great extent on grasshoppers, locusts and their larvae.

DISTRIBUTION. Drier areas of India including Kutch, Gujerat and Saurashtra. Resident. It is found all over Saurashtra and is fairly widespread in forests, grasslands and thorny jungles, especially where the undergrowth is thick.

NESTING. Season—February to August, rarely up to November. Most birds lay from March to July. The nest is made of twigs and lined invariably with leaves of trees of which the favourite is the 'Neem'. It is sometimes well-hidden, most nests being placed high up in forks, usually in 'Babul' trees. In grasslands where there are other jungle trees, the nests are placed at the summit of hill-tops or on the spurs. The trees on hillsides on which the birds nest are not tall but the leaves give them ample protection, especially after the rains have broken. In shady 'Babuls,' the female sits tight on the nest and her protruding tail often gives the appearance of a broken stump. The eggs number two to three and are white ovals. Unlike other Cuckoos, this bird makes its own nest and rears its young itself.

FOOD. Mostly grasshoppers, locusts, ground insects, mice, small snakes, eggs, and the young of animals not larger than rats. It relishes lizards and kills even the largest bloodsuckers. It runs along the ground in a creeping manner in the underbush, stopping and raising its head for a moment or two and then continues its search for food. If any lizard or insect is flushed, it speedily runs after it until the prey is caught. Lizards are swallowed whole after some manipulation by the bill to crush the bones.

EASTERN COMMON CRANE

Gujerati Name—Kūnj

Grus grus lilfordi SHARPE

See Coloured Plate 14.

SIZE. Between the Sarus and the Demoiselle Crane.

IDENTIFICATION. The 'Kūnj' or the Eastern Common Crane is very much like the Sarus, but it is easily separated from the latter by one white and two dark stripes on the head and neck, by its black legs and feet, and by the dark tips of the tertiaries hanging over the tail-feathers. When very closely seen, it has a small round bare patch on the crown or top of the head which is dark red; this patch is not always visible in the field. The bill is greenish-grey to dark ash-grey. The whole body from the lower-neck is grey, the quills being black; the secondaries are grey, tipped with black. The legs are black. The eyes vary in colour from yellow to orange-red, but they are brown in some birds. The sexes do not differ but the female is slightly smaller, a fact which is hardly noticeable. The young of the season have the whole head, upper-neck and breast buffy-white which become ginger in many birds; they emit a shrill whistle while flying.

NOTES. The 'Kūnj' is seen in fair numbers at about Divali time which falls late in October or early in November, although the birds actually arrive by Dassera time (October) or even earlier. It is in abundance during the Winter months upto Holi (March) when the return journey starts. These Cranes prefer open country and the sea coast where there is plenty of food. They first come in small flocks and then congregate into thousands. While migrating, they keep to a V-shaped formation and usually fly quite high. The call is like a deep double note of a trumpet, viz., *kron-krān*, which can be heard from a great distance. The birds may be seen circling high in flocks over sheets of water. Having fed in the morning, they come to rivers or streams from 9.30 a.m. to 2.00 p.m. They then remain there throughout the afternoon, and start again for their feed in the evening. Mouths of rivers are the favourite places for watering and resting during the day and at night. While feeding, they are not very wary and if one is wearing a peasant's dress, one can approach them even upto 30 yards; but on the slightest suspicion they fly away even if one is at a distance of 60 yards or more. During the afternoon, the birds are wary and will not usually tolerate close approach. Once they have been shot at, they become very cunning. Nevertheless, when they are newly arrived and in a state of hunger, they allow close approach while feeding. The flight of the 'Kūnj' is straight though they often change their course. The wing-beats are slow but the speed is not as slow as it appears. I have timed the

average speed at 40 m.p.h., but when chased, the birds hasten the wing-strokes, and speed upto 60 m.p.h. is, then, attained. As they take off, they take a few strides along the ground before lifting their bulky bodies, the wings being half stretched as they bend forward. They stretch their necks forward when about to take off and this is a distinct characteristic of the birds which have become wary. During Winter thousands and thousands of 'Kūnj' congregate in salty marshes, open treeless areas, semi-deserts, open fields, and mud-flats on the seaside. On their resting ground, I have often seen them display as if dancing. Their afternoon resting places as well as night resorts are rendered conspicuous by the feathers, mixed with excreta, strewn all over the ground. This Crane comes from a distance as vast as China, Siberia, Tibet, and the Russian Steppes; it is a bird which can travel a few hundred miles in a day with comparative ease. Sick or wounded birds are sometimes seen on migration. Others suffer from a long, tiring journey. These solitary birds are abandoned by their flock as they are unable to keep up with its normal flights. So, when one sees a solitary 'Kūnj,' one may be sure it is ill in some way or the other. A pair or small groups or large flocks of upto 10,000 birds may be encountered during Winter. On migration, they keep to a V-formation. While feeding and resting, there is always one bird which acts as sentinel and when it gives a warning by a short, grunt-like sound, all the others raise their heads and, on sighting danger, the leader stretches out his neck in characteristic fashion, and all follow suit; in a second most of them have taken a step or two and are up in the air. The 'Kūnj' may be killed in various ways. Kūnj-shooting may be done either by going to the fields in the early morning in a car when groups of birds are scattered feeding and thus permitting closer approach, or by erecting 'hides' or 'butts' at their regular watering places where one may be able to attract them with greater certainty by using decoys. Shots No. 1 to 4 are the best as they are very tough birds. Once I had the good fortune to witness the unity amongst these birds. When a trained Peregrine Falcon had downed one of the birds of the flock, the rest, which were flying away, deliberately turned round to attack the aggressor and set upon her.

DISTRIBUTION. Breeding in Russia, Siberia, China and Tibet, and migrating south in Autumn and Winter. The bird is found in most parts of India including Kutch and Gujerat except the well-forested areas. It occurs wherever there are open fields and cultivation, and in semi-desert or desert country. It is found all over Saurashtra and is abundant on the Eastern Saurashtra sea-board. The birds usually arrive in the first week of October and depart in March. However, they have been seen earlier, also.

FOOD. Insects, green shoots, grain and ground-nuts. They feed during early mornings and evenings, and upto mid-day during Winter. On the

whole, this bird is harmful to crops, especially ground-nuts, and wheat to some extent. However, when there is an outbreak of locusts or grasshoppers and their larvae, it feeds upon them voraciously and thus serves a very useful purpose. The birds which arrive early, from late September to October, reduce insect pests considerably. Yet later on, they themselves become highly destructive to ground-nuts. A flock of 50 birds will, if undisturbed, destroy a whole field of ground-nuts in a day. When they have found a suitable field, the leading 'Kūnj' emits a shrill cry and a few short croaks which indicate that food is nearby, and in a short time all the birds in the neighbourhood gather there in large numbers. They are voracious feeders and are easily located from a great distance while feeding by their characteristic calls. These Cranes have a definite tendency to scatter while feeding, a whole flock of about 1,000 birds often separating into smaller units. A pair with its one or two young may be seen feeding together. After feeding, the Cranes fly to their roosts, only to return the next day. These flights are fairly low and within easy range of the gun. I have shot them with No. 8 and they are brought down easily if hit in the head. Although not highly prized as a table bird, the 'Kūnj' is relished by many. One often witnesses a long chain of birds like a big wave moving in the air or like a thin line of smoke in the distance, as a group of 'Kūnj' disappears over the horizon. They also appear and disappear from sight when circling at mid-day.

SARUS CRANE

Gujerati Name—Sāras

Grus antigone antigone LINNAEUS

See Coloured Plate 9 and Plate 38.

SIZE. Larger than the Vulture. Standing the height of a man.

IDENTIFICATION. A common bird of the countryside; also found on lakes and rivers. It is our largest bird and easily recognised by its red head, light grey body and pink legs; the first and the last characteristics easily distinguish it from the 'Kūnj.' Moreover, the Sarus is larger than the 'Kūnj,' and the whole head and a part of the upper-neck except the crown are red. The tertiaries have more white in them than in the 'Kūnj,' and the under-wings are decidedly paler—a good pointer to its recognition while in overhead flight. The eyes are red and the bill is greenish-grey. The female is slightly smaller than the male. The Sarus Cranes are usually seen in pairs.

NOTES. The Sarus is commonly found in cultivated areas and next to reedy marshes, ponds and lakes. It is considered a sacred bird in most parts of India. The story goes that if one of the pair is killed, the remaining one pines and dies.

As the Saruses are devoted to each other and pair for life, this belief is not improbable. Were it not for this belief, the birds would soon have become extinct. They are sometimes seen in small flocks during the hot weather, and I have counted as many as 30 birds together. But unlike the 'Kūnj' which is seen in large flocks, the Sarus prefers to keep to pairs or small family parties. The flight is much like that of the 'Kūnj' but the wing-beats are more graceful and slower, and a quick rhythmic upward movement of the wing-stroke is clearly noticeable which always reminds me of a good oarsman. The Sarus does not, as a rule, fly very high except for basking in the sun; while the bird is flying high, the whiter under-parts and tail distinguish it from the 'Kūnj'. Near village ponds or 'khalavads' it becomes quite tame, allowing close approach. The call is loud and sonorous and differs slightly from that of the 'Kūnj' in being more drawn out and continued for a comparatively longer time. Also, it is deeper and more resonant. During the breeding season, the birds often indulge in dancing which involves jumping high into the air with wings widespread and often flapping them about; they also bow with the head and arch the neck drawing it in, and sometimes rest the head on the back. In this manner, they chase each other while turning and flapping their wings. In short, the whole show is quite amusing to watch. During their pre-mating dances, I have often seen one or two pairs joining in. These dances can also be seen off season. The Sarus is prone to local movements, visiting areas where there is permanent water. The tendency to group in small parties is generally noticed during the hot months only and where water is scarce or restricted to one large patch.

DISTRIBUTION. The whole of India including Kutch, Gujerat and Saurashtra. Resident and fairly common.

NESTING. Season—June to November, the principal months being July, August and September. I have occasionally found nests in March, but this is very rare. The nest is a mass of reeds and rushes piled together. The site may be on an islet or near the water's edge amongst reeds. Most of the nests are surrounded by tall reeds and water while some are in fairly low reeds and can be seen from a distance but always in the vicinity of water. One or two eggs are laid. They are slightly pointed at one end and vary in colour, some having a dirty white ground with rusty-coloured spots while others have lavender or purplish markings, or reddish-brown spots. Both birds incubate and take parental care. The parents drive away large animals such as jackals, but slink off the nest in a creeping manner in the case of Man. When the chicks are threatened with danger, the parents often dance about and try to lead the intruder away from the hiding young. This behaviour is also noticed when a nest with eggs is approached. As soon as hatched, the young are able to run and follow their parents. They are similar to the young of the 'Kūnj' and are

recognised by the ginger colour of the head and neck which extends upto the back and upper-breast.

FOOD. Water-plants, lotus or nymphaea bulbs, water-snails, insects, and frogs as well as grain. This bird is not at all destructive and, during the breeding season, it lives almost entirely upon plant and water-life. But I have seen it devouring small snakes during the breeding season. Fallen grain is, of course, eaten during the post-harvest season. It does not ravage the fields in large numbers like the 'Kūnj', and is much less of a gregarious bird. As it is omnivorous in its diet, young birds can easily be kept and they become fairly affectionate pets. If, however, males are kept, they become vicious as they grow and readily attack a stranger or intruder with arched head and neck, especially during the breeding season.

DEMOISELLE CRANE

Gujerati Name—Karkarō

Anthropoides virgo LINNAEUS

See Coloured Plate 14.

SIZE. Considerably smaller than the Sarus (about $2\frac{1}{2}$ feet).

IDENTIFICATION. This Crane is distinguished from the Common Crane by its much smaller size, by the white plumes which start from above the eyes and continue behind the head, and also by the black or very dark blackish-grey face, head, neck and breast. The crown, nape and upper-parts are much purer grey. The eyes are bright scarlet or blood-red, but vary from orange to red. The tertiaries near the tail are well developed. The bill is greenish-black with a fleshy-pink tip. The legs are black. Sexes alike.

NOTES. The Demoiselle is a small Crane arriving much earlier than the Eastern Common Crane, and I have records of it coming into Saurashtra as early as the end of July and the middle of August. It is at this season that the bird is seen on the extensive grasslands known as the Bhal Vids, where they feed much on the grasshoppers and destructive locusts. Newly arrived birds are very active and even more voracious than the larger Crane. Hundreds of birds may be seen grouped together, walking quickly and calling as they feed. The Demoiselle Crane is seen in open country, flying in V-formation. Its habits are like those of the Common Crane. The call, however, differs slightly in being harsher and shorter and, therefore, the Indian name 'Karkara' is given to it. While on the wing, it emits its cackling call constantly for some time. On the whole, it prefers ground-nut cultivation and is abundant wherever this

crop is plentiful. Thousands of these Cranes gather on rivers and watering places during mid-day, and one sees a large sheet of grey colour mixed with black as a flock settles on the water's edge. While feeding, the bird is not as wary as the Common Crane. So fearless is it in certain districts and so thick are the flocks that I have seen a cart pass through a flock without disturbing the birds. However, once shot at, they become equally wary. This Crane is more active on the wing as well as on ground than its larger cousin. It is found in greater numbers inland than the Common Crane. It arrives earlier but restricts itself at this time to grasslands. Records of it in Bhal, Gohilwad, are as follows: 29th August 1936, 25th September 1937, 24th September 1942, 28th August 1944, 18th September 1945, 19th September 1946. In some parts of India, this and the Common Cranes are systematically decoyed and shot. During the season when they do most harm, shooting should be encouraged. As food, they are not bad and some shikaries consider them excellent.

DISTRIBUTION. Breeding in North Africa, Central Asia, Persia, Southern Europe and China, and migrating to India including Kutch, Gujerat and Saurashtra in Autumn and Winter. In parts of Central and Eastern Saurashtra, it is abundant.

FOOD. The Demoiselle Crane is a faster feeder than the Common Crane, and has less tendency to scatter while doing so. This is a clear disadvantage to the sportsman. It feeds on grasshoppers, locusts, grain, ground-nuts and green shoots. The birds are definitely harmful wherever ground-nuts are planted. They will swallow them whole, and I have taken as much as 1 lb. from one bird's crop. This was merely the morning feed. Think of the millions that come and destroy the crops. However, during the locust and larvae season, they help us by destroying these pests, but the damage they do during the Winter months equals or surpasses the good done earlier in the season. In short, the birds seem to be useful from July to October and harmful from November to March. They are, however, easily scared away from fields.

GREAT INDIAN BUSTARD

Gujerati Name—Ghōrāḍ

Ardeotis nigriceps VIGORS

See Coloured Plate 14 and plate 36.

SIZE. Larger than the Vulture (about 3 feet).

IDENTIFICATION. A large brown and white bird with a black cap or crest. The legs are dull yellow. On the breast, there is a black band which is broader in the adult males. The males are larger in size and whiter on the breast.

When closely seen, the feathers of the neck, which are white, appear finely pencilled. This is especially noticeable in the female. The brown of the back or upper-parts is a sandy buffy-brown when seen in sunlight; the wing-coverts are grey and black, mixed with a little white, and this is clearly seen when the bird is at close quarters. The tail is brownish and not very long; it is marked with faint grey and brown bands. The lower-parts are white. The bill is yellowish and tipped black, and appears comparatively broad and short for such a large bird. The eyes are pale yellow, sometimes mixed with brown. Like most Bustards, the bill and head are held up at an angle of about 45 degrees. The neck is kept outstretched, and the movements are slow and graceful. From a distance, the long white neck with the black crest is conspicuous. The cock bird appears as large as the 'Kūnj,' but the hen is equal in size to the Demoiselle Crane or 'Karkara'.

NOTES. The Great Indian Bustard or 'Ghōrād' prefers seclusion, and wanders either alone or in small groups in remote grasslands. It is also found in crops and cotton fields, but is in truth a bird of extensive 'vids' and stony barren land. It prefers well-drained soil such as a hilly belt where there is plenty of grass. It is not found in the jungle but occurs in semi-desert country studded with low bushes. However, open low hilly country with grass is its favourite abode. In Northern Saurashtra, the country near Dhrangadhra is typical in which stony and grassy hills as well as almost flat land studded with 'Khip' (*Leptadenia spartium*) and 'Jeepta' (*Triumfelta rotundifolia*) bushes form the most ideal habitat for this species. As a rule, these Bustards do not wander far from their feeding and resting areas unless disturbed. In Winter, however, they sometimes leave their breeding grounds in search of food. Some birds travel great distances during the breeding season. Like the Florican, they depend much upon the rains and often enter a part of the country which has had a good rainfall and consequently an abundance of food. But, on the whole, they are less migratory than any other Bustard. This magnificent bird has now become very rare, being killed off by so-called sportsmen and local shikaries. Owing to its persecution, it is now restricted to secluded areas and there, too, it is seldom seen.

At one time, the species was found in fairly large numbers but, alas, now it is threatened with extinction. As the bird lays only one egg, the increase of the species is slow and, therefore, every effort should be made to protect it. Doves of 40 were at one time not uncommon with us but now even one of 16 birds is a rare sight, and only solitary birds are seen occasionally. Where the bird is unmolested, it will allow close approach upto 40 yards in a cart or car, but where it has become wary, it invariably takes wing even at 200 yards or more. The bird is so wily at times that it will move behind a 'Chepra' bush as one goes round it, always keeping out of view. The wing-span is large and the body is heavy, weighing from 15 to 25 lb.; females are, of course, lighter. When about

to fly, the bird takes a step or two before rising and then takes to the air easily. The flight is magnificent and the wing-beats are graceful and slow, much like those of a 'Kūnj.' Once it takes wing, it does not usually settle for a mile or two, and I have often seen the birds completely disappearing out of sight; and yet where undisturbed, they may settle within a few hundred yards. When flying, they keep fairly low. The call is usually a low grunt but, on the whole, they are very silent, except the males which emit a loud booming sound during the breeding season.

DISTRIBUTION. Certain parts of India including Kutch, Gujerat and Saurashtra. Resident. Now very rare everywhere. In Saurashtra, it is becoming extinct.

NESTING. Season—June to October is the time when most eggs are found, but it is said to lay practically the whole year round. It prefers short or thin tall grass to lay in, and the nest is a mere scraping on the ground made by the parent bird. The male is polygamous, often having a number of hens. He takes no interest in the eggs or young. At this time, or should I say during the breeding season, he displays himself much like a Peacock, opening his tail and strutting much like an old Turkey cock, inflating his neck almost level to the ground while emitting a loud booming call which sounds something between the roar of a lion and the gurgle of a camel. At times, the upper-plumage is ruffled and the tail is alternately raised and depressed. The call of the male can best be heard early in the morning and late in the evening, even before dawn and after sunset. The long neck is expanded like an elongated balloon, the throat inflated with air, and the sound emitted can be heard for miles. Low hillocks or elevated ground is where male birds prefer to display. At times, the inflated neck-sac gives a false impression of the crop being full. The display is not kept up for long, being over in a few moments. The Bustard has very keen eye-sight and, once suspicious, it either takes wing or hides in long grass or crops. After mating, the hen selects a site which is less disturbed by people, and there she lays her single egg. There is much doubt as to how many eggs the Bustard lays. I have invariably found only one egg and most of the Ornithologists have had similar experience. However, I have been told of two eggs in a nest, but whether it was the result of one hen or not I cannot vouch for. As two hens are often seen with their single chicks together, it is quite probable that two hens lay close to each other. The egg is oval and varies in colour from a rich reddish-brown with lavender markings and splashes to a more chocolate colour, while some eggs are khaki-brown. Reddish-green and bluish eggs are generally very rare. An unusual site for an egg to be deposited was in an open ploughed field. Usually the egg is laid in short or thin long grass. There is much sense in this for the sitting bird can see danger approaching. The female sits close till almost stepped on when she suddenly flies up making a loud noise with the wings. Some birds in

scantier grass creep away from a distance, but this is not usually the case unless the female has a chick. A good indication of a hen having the young is that she hisses or gives out a grunt when approached, or creeps away silently only to sit down again. On one occasion, I saw two hens emit a low guttural sound and walk towards me where the young were hidden in order to protect them from a Steppe Eagle which had seen the young and was hovering not very high above. The nest is difficult to find in extensive grassland. The female with the young, when approached, may sometimes feign injury, flying low with outstretched wings and dangling her legs as if wounded. The young are very obedient, lying close until called, but they cannot remain silent for long without emitting a short whistle. Once suspicious, the female may lie low or creep away from the nest or may sit close when it is difficult to see her as her white neck often merges with the white stems of the 'Chepra' bushes, and even in fairly short grass she is impossible to spot. The chick is much devoted to the mother. When disturbed, it has the same habit as that of the adult of moving its head from one side to another while walking.

FOOD. Grasshoppers, locusts, insects, small snakes, lizards, certain grasses, seeds, grain, vegetable seeds, fruits and shoots. The birds will swallow small gravel in order to assist digestion. During Winter, the food consists mostly of grasshoppers, locusts, and grain. This Bustard is a useful bird, but it is too few in number to make any real difference. It feeds during early mornings and late evenings, and rests during the day. In Winter, it often feeds on the Bor fruits (*Zizyphus*) also, and takes cover in hedges and cotton fields. It is nearly always seen on high ground and in crops. The white neck betrays the bird from a distance.

MACQUEEN'S BUSTARD OR HOUBARA

Gujerati Name—Houbārā or Tīlūr

Chlamydotis undulata macqueenii J. E. GRAY

See Coloured Plate 8.

SIZE. Larger than a large village 'murghi'.

IDENTIFICATION. The general appearance of the bird is of a sandy-buff colour with black and white feathers on the side of the neck, and a crest of blackish feathers which can be erected. The ruff on the side of the neck can also be expanded. Other portions of the head and neck and upper-breast are light ash-grey; the lower-parts are white. The tail, when spread-out, is fan-shaped, barred, and having considerable amount of grey and buff. The legs are pale yellow, and the eyes are yellow but browner in the young. In flight, the white

wing-patch is conspicuous. Sexes much alike. However, the male has a longer crest and ruff.

NOTES. The Houbara is found in sandy desert, and flat country of a semi-desert type mixed with bushes and grassy clumps. Another typical habitat is sand dunes on the coast. It also visits open low hills and broken stony ground. It is able to camouflage itself extremely well and becomes difficult to spot even in open country. It keeps to ground that matches its feathers and makes full use of the slightest undulation, grass or bush as cover. When disturbed, it sometimes erects its crest and side-feathers, and stretches its neck high. However, it usually manages to creep away out of sight or takes wing from a fair distance. Birds which have crouched will remain in that position till almost stepped on. The Houbara is a popular quarry for trained Falcons, and excellent flights can be witnessed. Popularly known in the Punjab as 'Tilur,' it is not an easy quarry to capture, and when about to be caught, it suddenly drops to the ground and puffs out its feathers, spreading the wings and tail in menacing fashion, and then turns round to discharge its sticky excreta on to the Falcon's head and body, thus escaping from certain death. This ruse is also used when the bird is flying and the pursuing Falcon or Hawk is blinded or its feathers are plastered by the sticky faeces. However, not always can the 'Tilur' evade the clutches of its enemy. Another method of escape is by 'ringing' upwards; that is, if it cannot shake its enemy off by twisting and turning in the air, it attempts to out-fly him. When Eagles or Falcons are flying above, the Houbara flattens itself out on the ground, merging completely with the background. Birds lying in this manner are impossible to discern. The flight is a rapid beat as the bird gets up, but otherwise it is much like that of a Florican. Sometimes, the bird tends to change its course frequently, and when alighting, runs for a short distance before completely closing the wings. The wing-beats are slow but the speed is fairly fast. It can circle and mount up to reasonable heights. These Bustards are seen either singly or in pairs, and yet I have seen as many as six together. Like all Bustards, their eye-sight is good. They are fast walkers and runners when disturbed but do not immediately take wing unless pressed; otherwise, their movements are slow. The Houbara appears to arrive soon after the Monsoon and, if unmolested, keeps faithfully to the same locality or habitat for which it has taken a liking. During the hot hours it is almost impossible to locate the birds as they conceal themselves in grass or broken country, but in the early morning or late in the evening they come out to feed and may be easily spotted. The Houbara is a good table bird and hence it is shot by sportsmen freely. There are two methods commonly used. One method is to drive the birds over 'butts'; the other is to approach them in a car or on a camel: this is done by edging in slowly while circling the bird; by adopting this method, it is very easily shot. I have shot it by walking it up after having marked it down but this must be done properly as it is an

elusive bird and does not permit close approach on foot unless it has decided to lie close. In sandy ground, a good shikari may track a bird down.

DISTRIBUTION. Breeding in Turkestan, Palestine, Arabia, Persia, Afghanistan and Baluchistan (Pakistan), and migrating to India including Rajasthan, the Punjab, Kutch, N. W. Gujerat and Saurashtra during the post-Monsoon and Winter months. In Saurashtra, it is an uncommon but regular visitor in the northern portion from Jamnagar to Dhrangadhra; specimens have been shot in Wankaner and Jasdan, and it is a straggler to Eastern Saurashtra, having been recorded in Bhavnagar a number of times. Recently, some birds have been coming annually from 1949-52 on the same sand dunes close to Talaja (Gohilwad) as this small area seems to provide ideal food and cover.

FOOD. Insects, lizards, fruits of *Capparis*, seeds, grain, and shoots. The bird has a liking for 'Khip' (*Leptadenia spartium*) and 'Jeepta' (*Triumfetta rotundifolia*) bushes, mustard fields and the 'Javasso' or 'camel' thorn, (*Alhaji maurorum*) found in the salty semi-desert country. It often enters 'Tal-Bawal' (*Acacia farnesiana*) and feeds near wheat cultivation. The early morning or the late evening is the best time to watch it. Birds watch out from elevated ground before leaving their abode to feed. While feeding they roam in a zig-zag manner, sometimes running and then suddenly stopping to feed, somewhat like a Courser.

LESSER FLORICAN

Gujerati Name—Khad Mor

Eupodotis indica J. F. MILLER

See Coloured Plate 14 and Plates 39 to 42.

SIZE. About that of a domestic hen.

IDENTIFICATION. The general appearance of the male is that of a black and white bird with long legs and a slim neck. When more closely seen, the head is black with a white throat; on both sides of the head are thin elongated feathers which appear behind the head but start from near the cheeks. The auricular feathers, neck, breast and lower-parts are black; from the base of the upper-neck there is a broad band of pure white running along the side which is conspicuous even from a distance. The upper-parts are of khaki colour with black arrow-head markings; the stiff wing-quills are sharply pointed and are brownish, pale khaki and black. The tail, which is not long, is khaki and has dark brown to black bands; it can be erected fan-wise. The legs are long and dull yellow, and there are three toes to the feet. The eyes are brown. The pointed bill is light yellow on the lower-mandible, the upper-mandible being dark brown

to black at the base. Old birds appear to have pallid eyes, and the bill flattened and corrugated near the nostrils. The upper-parts vary in colour from almost light golden to dark khaki-grey. After the breeding season is over, the male resembles the female, losing his auricular plumes completely. However, the white patch on the wings is retained which identifies him from the female. She is uniformly yellowish-khaki. She does not have the black ear-plumes but is marked with dark brown arrow-head markings on the upper-parts and black streaks on the crown. Her fore-neck has black streaks and the lower-parts are buffy-white. She is of a lighter colour and more finely spotted, with the tail banded with grey. Her eyes are paler than in the male, and on an average, she is slightly larger than him but this is hardly noticeable in the field.

NOTES. The 'Khad-Mor', as the Lesser Florican is known, is a bird of 'vids' and open fields, but it is also found in forest areas in the non-breeding season. The advent of the Monsoon is hailed by the arrival of the Florican. Newly arrived birds take refuge in thorny scrub, 'Babul' jungles and grassy 'shedhas'. Most of them arrive in Saurashtra about May and June when they begin to assume their breeding plumage, the black feathers appearing in patches. Male Floricans are very pugnacious and fight vigorously for their established breeding grounds. During the breeding season, which coincides with the Monsoon (June to October), their peculiar and fascinating courtship display advertises their presence to the rival males and serves to attract the females. They jump up about 5 to 6 feet in the air and at the same time emit a short croak-like sound, much like a frog's. The movement is rapid and takes only a few seconds to complete. With a favourable wind, this sound is audible for miles. The males which have been shot at, or are attacked frequently, do not emit the croak but merely jump up silently. The Florican is a fast walker and runner, and while in crops it is difficult to flush him. In long grass, he escapes notice and does not easily take wing. He is a shy bird, always shunning observation. Also, he has a very keen eye-sight and can crouch very low, moving secretly away out of sight even in short grass. The flight is not very fast but the wing-beats, as the bird gets up, are rapid. The bird does not fly very straight and changes his course frequently. I have noticed that he always flies up or across the wind, and rarely, if ever, downwind. The birds moving from one place to another for feeding fly low, and those migrating do not fly very high. The female is not known to jump, but I have once heard her emitting a quack like a Duck, thus attracting the male from a distance which ran to her and began courting; a *quirk*-like call is emitted when a female is driven off the nest. During the breeding season, she is very seldom seen, but the calling and jumping males can be observed in the early morning and evening. From an ant-hill in a large 'vid', it is possible to locate half a dozen or more Floricans provided the ground is favourable, but four to five males are not difficult to hear from one place during

an average season. When calling, the males prefer coming out into short grass, and many times have I seen them in quite open ground in groundnut fields. They also prefer a slightly high ground. When the calling or breeding season is in full swing, the male establishes a particular place from where he regularly jumps; these selected places are called 'akhlis'. These birds definitely call more vigorously on cloudy days, and I have sometimes heard them at noon and almost throughout the day. But on hot sunny days, they stop calling an hour after sunrise, and in the evening they commence their display before or after sunset when everything is quiet. Unless well-hidden, the bird-student will not be able to see them at close quarters as they invariably hide or move away when approached. A good distance to watch them is about 100-150 yards or more. Binoculars are most useful in studying their habits. A new type of courtship has been seen by me and recorded for the first time (See J.B.N.H.S. Vol. 49, No. 2). The male, on seeing a female close at hand, puffs his head-feathers and stretches out his neck, moving it from side to side as he comes forward, and then stops and jerks his head and neck backwards against his back, at the same time half raising his wings as if clapping them on the sides. The legs are slightly bent as he stops to jerk his head backwards to complete the movement. This is repeated at intervals a number of times. Also, he vigorously attacks a stuffed decoy male if placed within his territory.

The Florican affords excellent sport to falconers. The Laggar or the Shahin is trained to circle at a fair height and the quarry is then flushed. The Florican very often lies low seeing the danger and refuses to fly, and it is then very difficult to flush him without the use of dogs. When hard pressed by a Falcon, the Florican immediately drops into crops or grass and, if pursued, dodges and jumps about, ultimately flying away by deceiving his adversary. When missed in the air by a Falcon, he accelerates his speed with rapid wing-strokes, whereas on the ground he often puffs his feathers opening the wings, and stabs with his sharp bill in order to escape being killed.

DISTRIBUTION. Most parts of India including Kutch, Gujerat and Saurashtra. Local migrant and resident, moving into open grasslands or 'vids'. Very little is known about the birds' non-breeding residence but by observation one can say that the birds coming into Saurashtra during the breeding season appear to come from the east and south-east direction. Thus it appears that they come from the Narbuda and the Tapti Valleys, Malwa and the Deccan Plateau upto north of Khandesh. Some birds seem to remain in the 'vids' throughout the year, but the majority of them leave from October-November onwards. From experiments carried out in Bhavnagar (See Appendix No. IV Florican Banding), it has been proved that the same birds do not come to the same 'vids' every year, though some exceptions have been recorded from time to time. The migration much depends upon the rainfall. The birds

will establish themselves in larger numbers in those areas where the Monsoon is heavy and good. They can migrate with ease in heavy rain because their pointed stiff quill-feathers are waterproof.

NESTING. Season—June to October, but it much depends upon the Monsoon. In Saurashtra they generally breed from July to October. Two to five eggs are laid, and rarely six, the usual clutch being of five. The eggs are roundish and slightly vary in colour and markings, some having a dark olive-ground while a few rare clutches are light greenish-blue marked with reddish-brown splashes. The normal colour is a dark greenish-olive or olive-brown. The nest is a scrape or depression on the ground or under some thorny bush, in short grass or crops. As a rule, the birds do not prefer patches of high grass for nesting. The female alone sits on the eggs for 21 days and rears the young, and while incubating, she is difficult to flush unless almost trodden on. I have found nests not very far from each other, but this is not the usual case. The nest and eggs are not easily found once the grass is tall. The young birds in down appear much like miniature Rheas. The female emits a short whistle to call the young.

FOOD. Mostly grasshoppers, beetles, blister-flies, termites and such other insects. Seeds, grain and vegetable shoots are also part of the bird's diet. It is, without doubt, a useful bird. It feeds during early mornings and late evenings.

EASTERN BAILLON'S CRAKE

Gujerati Name—Baillon-ni Saptā-Kūkaḍi

Porzana pusilla pusilla PALLAS

See Coloured Plate 15.

SIZE. About that of the Rain Quail.

IDENTIFICATION. This is a small plump Wader. Head to back, olive-brown; face and breast, dark plumbeous; flanks and under tail-coverts, barred with broad black and white bands; upper tail-coverts, streaked with white extending towards the back; bill, green; eyes, red; legs, pale greenish-yellow. The first primary has white outer-web as in the Spotted Crake. The bird is found in marshy ground and amidst thick reeds. However, it is rarely seen. Young birds have buffy-white lower-parts, faintly barred flanks, streaked crown and white chin.

NOTES. I have collected specimens in grassland during stormy weather. But most of them may be seen in reeds or marshes while out Snipe-shooting. At Hathab on the Bhavnagar coast, the bird has been recorded earliest on 25th September.

DISTRIBUTION. Practically the whole of India. Rarely seen in Saurashtra but undoubtedly a regular Winter migrant. Uncommon. Breeding in Kashmir from May to August.

FOOD. Aquatic insects, seeds and vegetable matter.

SPOTTED CRAKE

Gujerati Name—Tapkidi Santā-Kūkaḍi

Porzana porzana porzana LINNAEUS

See Coloured Plate 15.

SIZE. Slightly larger than the Grey Quail.

IDENTIFICATION. A bird similar to a miniature Moorhen. Upper-plumage, dark brown with pale edges; abdomen, whitish; legs, greenish; bill, yellow, with an orange base. In general appearance, a brown bird splashed and speckled as if with white paint.

NOTES. This bird appears to be migratory and I have only seen it from October to February while shooting Snipe in very wet and marshy ground. It is not easily flushed but, when put up, it flies quickly, if heavily.

DISTRIBUTION. Breeding in Europe and Central Asia, and migrating to most parts of Western India in Winter. Uncommon in Saurashtra. I do not think it is very rare but only difficult to find.

FOOD. Aquatic plants, their seeds and shoots, water insects, snails, etc.

BROWN CRAKE

Gujerati Name—Nāni Davāk or Taphkhiri Santā-Kūkaḍi

Amaurornis akool SYKES

See Coloured Plate 15.

SIZE. Slightly smaller than the Partridge.

IDENTIFICATION. In appearance much like a Moorhen, but the upper-parts are more olive-brown. Chin and throat, whitish-grey; lower-parts from breast, ash-grey; eyes, red, but brown in young birds. The bill is dark greenish-brown but lighter at the tip; the legs are greyish to plumbeous-red in the breeding season. Where there are large stretches of tall reeds, this Crake is not uncommon. It is a shy bird, running into cover on the slightest approach;

yet at times it allows fairly close observation. The long legs enable it to wade and to feed on overhanging bushes. The early morning and the late evening is the time when it is most seen, feeding on the edges of reed-beds or crossing the road. From a distance, it can easily be mistaken for a Moorhen. Sexes alike.

NOTES. I have regularly seen these birds in pairs at Khodyar and Jasdan in Gohilwad in the reedy river-beds. The call is a shrill one, much like that of the Little Grebe; it also emits a sharp whistle.

DISTRIBUTION. Most parts of India. Uncommon but well-distributed in Saurashtra. Resident. It seems to prefer certain river-beds where it is found; in others, it is almost absent.

NESTING. Season—May to September. It makes a pad-nest of reeds, grass or rushes which it places amidst reeds. The nest is very difficult to find as it is concealed in tall reeds. Four to six eggs of a rich buffy colour with reddish-brown markings are laid. The birds prefer long stretches of reed-beds to nest in.

FOOD. Insects and grain.

WATERCOCK OR KORA

Gujerati Name—Kôrā or Ja] Mūrghō

Gallicrex cinerea GMELIN

See Coloured Plate 15.

SIZE. Larger than the Partridge.

IDENTIFICATION. The bird is recognised by its pointed frontal shield which, in the breeding season, becomes a red horn-like protuberance. The general appearance of the male is black; flanks, with some grey on them; abdomen, white; scapulars and wing-coverts, blackish-brown, edged with slate-grey; wings, blackish-brown with white outer-web of the first primary; under tail-coverts, buffy-white with brown bars; eyes and shield, bright red; legs, red. The female is much browner, having whitish streaks on the face; lower-parts, light brown with some barring mixed with brown; bill and eyes, yellowish-brown; there is no shield but a triangular fleshy forehead which is pale yellow; legs, greenish-brown. Juvenile and non-breeding males resemble the females. The body-pose is very erect and the neck and head are nicely arched which remind one of the Purple Moorhen.

NOTES. I have collected only one specimen in juvenile plumage in Victoria Park, Bhavnagar, in June, 1948. Another was seen in the same place in June, 1951. The birds may be looked for in reed-beds surrounding lakes, rivers and

ponds. Those I have seen were shy and came out only in the early morning and late evening.

DISTRIBUTION. Fairly common in most parts of India but, apparently, very rare in Saurashtra. Non-resident.

FOOD. Aquatic insects and plants.

WHITE-BREASTED WATER HEN

Gujerati Name—*Davāk*

Amaurornis phoenicurus chinensis BODDAERT

See Coloured Plate 15.

SIZE. About that of the Partridge.

IDENTIFICATION. The general impression of this bird in the field is of a black Wader with white breast and face and a dark reddish-brown patch under the tail. Lower-breast, greyish; upper-parts, dark olive-brown, appearing almost black from a distance; eyes, red; legs, greyish-yellow; bill, green; upper-mandible, red at the base. The White-breasted Water Hen is found in reed-beds and prefers a certain amount of vegetation such as trees, rushes and hedges. Trees close to or submerged in water and thick reed-beds are ideal places to look for it. It is, however, a skulker and quickly runs away to cover.

NOTES. I have often found it some distance away from water. It is frequently seen crossing roads, keeping its tail erect and bobbing it up and down while moving. Some birds are not so very shy and will allow close approach; others flee into cover immediately. They climb on trees and branches of low hanging bushes in water. The call is a monotonous *ka-wānk ka-wānk*, repeated for quite a long time and heard during the breeding season. While calling, the bird assumes a pose which is like that of vomiting. It has certain other calls also, one of which is a *kāk-kāk-kāk*. This bird is quite a common one and is invariably found in jungle next to water or in large stretches of reed-beds.

DISTRIBUTION. The whole of India and Saurashtra. Resident. It is locally migratory, depending on water supply.

NESTING. Season—May to October. The nest is usually built on a thorny tree or a branch overhanging water. Submerged trees such as the 'Babul' are favourite sites. The nest is made of twigs, and lined with reeds and aquatic plants, and placed in a tree from a few inches off the water to about 15 feet up. The normal clutch is five eggs. They are dirty white with reddish-brown

to light salmon-pink splashes and streaks which are more numerous on the larger end. Some eggs have a buffy-white ground. The young are sooty-black.

FOOD. Water plants, their tender shoots and seeds, insects and snails. The bird usually feeds at the water's edge but it may work up on land for a considerable distance.

INDIAN MOORHEN

Gujerati Name—Jal Kūkaḍi

Gallinula chloropus indica BLYTH

See Coloured Plate 15.

SIZE. About that of the Partridge.

IDENTIFICATION. This is a common Waterfowl which is sometimes seen during the Monsoon but mostly during the Winter months upto April. The male is a blackish-brown bird while the female is slightly paler. The head and breast are of slate colour. While swimming or walking, the bird can be easily recognised by a white line on the wing running parallel to the body, and also by the under tail-coverts which are white; the tail itself is black. The bill is of two colours, most of it yellow to yellowish-green but with a red base. There is a red fleshy protuberance on the forehead which is distinctly seen during the breeding season. This is absent in young birds. The eyes are blood-red and the long legs are greenish to slate-grey. During the cold season, even the males appear colourless. The Moorhen is found near water and swims easily. The tall reeds and rushes are its main refuge in which it can disappear quickly and silently.

NOTES. In Winter every little jheel will have one or more Moorhens. At the slightest alarm, they will rush into cover from which they are extremely difficult to flush. They are excellent divers. However, in areas next to towns and villages, they may allow close approach and feed on land while in full view. The call is a short one, like a *kutrack-kutrack*, *kruck-kruck*, uttered frequently while feeding. In flight, the bird is slow and heavy, and has to scurry along the water for some time before rising. In fact, when disturbed, it seldom flies off the water but darts or flutters into cover.

DISTRIBUTION. Resident and locally migratory in India. Most birds in Saurashtra are local migrants though some pairs stay to breed, in which case they remain throughout the year where there is a perennial water supply with an abundance of reeds. They are commonly seen during the Winter months.

NESTING. Season—June to September. The nest is a platform made of reeds floating in water amongst tall and thick rushes. The eggs number 5 to 14 and are buff to yellowish-buff, marked with reddish-brown spots and splashes. Young birds are black.

FOOD. Grain, seeds, and aquatic plants and insects. These birds often walk along the water's edge in search of food. They also feed on water plants found on the surface. As they swim and feed, their heads move from side to side as they occasionally emit their characteristic call, *ku-track*. The Moorhen becomes fairly tame if regularly fed with grain. It is not a harmful bird.

PURPLE MOORHEN

Gujerati Name—Neel Kūkaḍi

Porphyrio porphyrio poliocephalus LATHAM

See Coloured Plate 15.

SIZE. About that of the village 'Murghi'.

IDENTIFICATION. A bright purple-blue bird with red forehead and bill. The blue is in two shades of dark and light. The frontal shield is a dull orange-red, the bill being quite bright. The shape of the head and bill gives it a rather grotesque appearance. On the forehead, there is a fleshy prominence which is also red. The long legs and slender feet are pink. A large white patch under the tail is conspicuous. Sexes alike.

NOTES. The Purple Moorhen is fairly common at the beginning of the Monsoon. It is prone to local movements and arrives during the hot months, and many birds are seen just before and after the first rains. They remain with us throughout the Winter months. In certain years, the influx of these birds is outstanding and the hot weather of 1946, particularly, was one that brought hundreds of them. They roamed on land fearlessly and were seen on the edges of lakes, small ponds and rivers, and in open fields. They frequent rushes and reeds, and are found on small and large stretches of water. They are not at all shy and it is surprising how few are killed by Birds of Prey and other predators. The call is much like that of a Crow, and the birds also make weird sounds like *kraw*, *krān*, *kionk krain* and *kracāo*. They are seen in groups of three, five or seven, and in larger numbers, too. Having long legs, they appear tall; while walking, they move the tail up and down, disclosing the white under it. When disturbed, they enter into tall thick rushes, but where there is no cover they fly clumsily, with their legs stretched behind them, to some island or some place where there are reeds or trees. They seem to roam fearlessly inland and

away from water in search of food for quite a distance. Near large towns and villages, they become very tame. At night, they often roost on trees or tall bushes or in high reeds on an island. Their long legs and toes enable them to climb and walk on water-plants with ease. I recorded an influx on 18th June, 1947, and another on 23rd May, 1948, on the Gaurishanker Lake at Bhavnagar.

DISTRIBUTION. Throughout India and the whole of Saurashtra. In Saurashtra, it is a local migrant, occasionally breeding from July to November. Odd birds are seen at all times of the year.

NESTING. Season—May to November. An irregular breeder. The nests are made of reeds and placed on large patches of reeds in water, and in some places the water is very deep. The birds often nest in small colonies; this is the case when they breed in October. Three to seven eggs are laid; they are large editions of the Moorhen's eggs, being a little more richly marked and having a clearer buff ground.

FOOD. During hot months, the birds feed, largely at the water's edge, upon water-plants such as *Vallisneria*. They hold this plant with one foot and feed upon it much like a Parakeet. They also eat grain and water-insects. They feed on the former voraciously and flocks of them will enter fields of 'Bajri' and 'Jowar' and eat up the newly-sown grain and sprouting shoots of crops, leaving the field bare. Thus, they are really destructive.

COOT

Gujerati Name—Aaḍ or Dasāḍi

Fulica atra atra LINNAEUS

See Coloured Plate 15.

SIZE. About that of a Teal or $\frac{3}{4}$ grown domestic duckling.

IDENTIFICATION. A velvety black Waterfowl recognised by its uniform colour and the soft white skin of the forehead just above the pointed bill which is light grey. The eyes are red and the feet are green to dark green. The Coot is usually seen swimming in groups or walking at the water's edge. Single birds are also seen on tanks, small ponds and lakes, but they are on the whole gregarious birds. Sexes alike.

NOTES. During the breeding season, they pair off but are not pugnacious, sharing the tank in which they breed. They are noticed coming in October and remain with us till March or April. Large numbers arrive during the cold weather, and practically every jheel has a few. There may be no Duck but the Coot is sure to be found on the jheel or tank. It is a silent bird and

a bad flier, and, therefore, always reluctant to leave water. When it does, however, it almost has to run along the surface before taking off. The wings are comparatively short and the flight is slow, having a quick wing-beat. When a flock is seen flying, it reminds one of locusts in flight. There is hardly any tail, and as the bird flies, the legs hang outstretched in line with the neck. It is not shy but resents close approach. In the vicinity of towns and however, villages, it becomes quite tame. Eagles and Falcons prey upon Coots regularly, and I have also seen Marsh-Harriers attempt to catch them. By remaining in a group and by splashing the water with their wings, they often scare off the largest Eagles. In spite of this, they are regularly preyed upon. A mass of black on a lake often reveals itself to be a group of Coots. In March or April, large numbers of them are seen ready for migration, and to see 500 birds or more is not uncommon. The migration takes place by night.

DISTRIBUTION. Most of India including Kutch, Gujerat and the whole of Saurashtra. The birds are mostly migratory with us, but some pairs breed where conditions are favourable. I have found them breeding in Bhavnagar but, as a rule, they are cold weather migrants.

NESTING. Season—July to September. The Coot breeds in small tanks where there are reeds. The nest is a floating one and attached to reeds and made entirely of them. Its shape is that of an inverted 'Antiali Paghadi'. Three to four nests are often found in the same tank. The bird selects any stretch of water from small ponds to large lakes to nest in. Five to nine, but usually seven, eggs are laid; they are dull creamy-yellow, and marked with minute black spots as if sprayed. During courtship, the male flattens himself and lifts his head, at the same time swimming round the female much like a drake. The young are black with orange heads. Refer J.B.N.H.S. April, 1947 issue, Page 724, for further details on breeding.

FOOD. Water-plants, their seeds, grain and live aquatic food. The birds often feed in groups. I have often seen them walk inland in single file and then start grazing and feeding upon grain. As they are liable to be attacked by Birds of Prey, however, they keep a sentinel at the water's edge which gives the alarm, and the whole flock, at the slightest suspicion, races to the water and plunges into it. It is amusing to watch them repeat this performance over and over again. Normally, they feed on the surface of the water and along the edges. They often dip their heads upending, and also dive below the surface like the Diving Ducks.

LITTLE BUTTON-QUAIL

Gujerati Name—Bil Batér

Turnix sylvatica dussumieri TEMMINCK

SIZE. Smaller than the Rain Quail.

IDENTIFICATION. This little Quail is very much like the Bustard-Quail and the Indian Button-Quail, but it lacks the dark colours of the former and the rich tones of the latter. It is pale brown and creamy-white on the under-parts; the upper-parts are blackish, mixed with reddish-brown, and have dry grass-coloured stripes. The breast and sides are yellowish-ochre and marked with small black spots; the head is greyish and freckled. The bill is grey; the legs in some birds are fleshy and greyish in others; the wing-feathers are brown. The tail is very short and pointed. The sexes do not differ as much as in the Bustard and Indian Button-Quails, but the male is slightly smaller and less richly coloured on the breast.

NOTES. In habits, this species resembles the Bustard-Quail and the call is a similar boom, but softer. It is more of a grassland bird, and more often found in standing crops. Thus, it is seldom seen, but it is not uncommon. When flushed, it does not fly far but lands about 50 to 80 yards away, and then it is difficult to flush the bird again. It camouflages well but, if once seen, can be picked up after being flushed once or twice.

DISTRIBUTION. The whole of India including Gujerat, Kutch and Saurashtra. In Saurashtra it is more frequently seen in 'vids', particularly in hilly areas. At Wankaner and Dhrangadhra, and in other arid parts, I have found this Quail very common.

NESTING. Generally March to October. The nest is cup-shaped, and in some cases it is fairly neat while in others it is rather untidy. It is made of grass and placed on the ground. Some nests I found were in short grass although high grass and crops were available in the area. Others I found in ground-nut fields where there were patches of short grass. Three to four eggs are laid which differ from those of the Bustard-Quail in being smaller and less heavily marked, but some are uniform in colour. The nests are difficult to find. Just after the heavy rains is the best time to search for them. They are not domed nor do they have a tunnel entrance.

FOOD. Insects, seeds, shoots and grain.

INDIAN BUTTON-QUAIL

Gujerati Name—Bhārati Bil Baṭēr

Turnix tanki tanki BLYTH

SIZE. About that of the Rain Quail.

IDENTIFICATION. Very much like the Bustard-Quail, but darker on the back and with distinct black splashes on the wings and flanks; the under-parts are off-white. The female is recognised by the rich reddish-yellow or reddish-brown collar which surrounds the neck and upper-breast; the lower-breast and flanks have black half-moon-like markings. The bill and legs are yellow. The male does not have the bright collar and is decidedly smaller and less colourful. This little Quail is seen mostly during the first rains and frequently heard during the Monsoon. It is usually found in jungles during the beginning of the season but prefers tall grass and 'vids'.

NOTES. It has the same booming call as the Bustard-Quail which is equally audible at a distance but can be differentiated. The Indian Button-Quail is seen either singly or in pairs. I have come across it in thin forest and grassland. The rainfall seems to affect its movements to a great extent. I have seen it appear during sudden rainfall or storm in the dry season. On the whole, however, it is rarely seen. In habits, it seems to be fairly secretive.

DISTRIBUTION. Most parts of India including Kutch, Gujerat and Saurashtra. It is prone to local movements and breeds wherever found. It is not uncommon in Northern Saurashtra during the Monsoon and I have heard it frequently at Wankaner where, in some places, it takes the place of the Bustard-Quail which is found so commonly in Southern Saurashtra. However, the Indian Button-Quail is not as common as the last two species.

NESTING. Season—June to October. The nest is placed on the ground in jungle or grassland, and it is often domed. The eggs number three to four and are heavily blotched with dark brown. The male alone incubates. The nest is very difficult to find. However, a search in areas where the birds are continuously calling generally reveals the nest. I found some in the grassy jungle at Wankaner. As in all Button-Quails, the female attracts the males and fights rival females.

FOOD. Insects, shoots, seeds and grain.

COMMON BUSTARD-QUAIL

Gujerati Name—Horn Batër

Turnix suscitator taigoor SYKES

See Coloured Plate 12.

SIZE. Somewhat smaller than the Rain Quail.

IDENTIFICATION. Female: Head, lead-grey and finely spotted with black; eyes, pale yellow; breast, black on a light fawn ground, forming a black patch which is not very large but can be clearly seen; lower-breast, pale khaki with the flanks a rich reddish-brown; the flanks and breast have black spots with short bars; legs, lead-grey; upper-parts, reddish-brown, spotted and streaked with light fawn or pale straw; bill, bluish-grey. The male is smaller and lacks the rich colours of the female; the black chest-patch is very small or wanting in most of them. In the *Turnicidae* Family to which this bird belongs, females are larger and more brightly coloured. Again, it is the females, and not the males, that call and fight for their mates. They emit a humming or booming sound like a *hooon* which is continued for about seven to eight seconds. The male, after mating, takes complete possession of the eggs, and after hatching them, he takes care of the young, the female often joining the family. However, the nest is made by the female. She may possibly attract males one after the other and lay a number of clutches, allowing her mates to hatch them. She may have any number of males but will not tolerate another female within her territory. Here is an extraordinary example in which Nature has given a brighter dress, and superiority of size and strength to what we generally call the weaker sex, at the same time entrusting the parental care to the male.

NOTES. The Bustard-Quail is usually found in pairs or singly throughout the year, but most birds are seen from February to July. They frequent scrub jungles, short grassy patches, forest areas and 'wadis'. I have often seen them crossing main roads. They walk quickly and in a slinking manner, never attempting to fly unless hard pressed; while in flight, the rufous colour on the wings is clearly visible. They have a good protective dress, and, when crouching, are almost impossible to detect. They are not rare, but at the same time they are not common, sometimes being really hard to find. It is usually by accident that one comes across them. However, they are often flushed when shooting in crops of 'Jowar' and 'Bajri'. But they seem to prefer scrub jungle and forest. The call can be heard from a surprisingly long distance. Following the direction of the call, it is possible to find them. While attempting to camouflage, the bird often sways its body to and fro.

DISTRIBUTION. Most parts of India including Gujerat, Kutch and practically the whole of Saurashtra. Resident and locally migratory.

NESTING. Season—almost throughout the year. Most eggs are laid from March to August. The nest is made of fine grasses and is placed under a bush or tuft in scrub jungle, patches of short grass, or crops. It is sometimes domed and its entrance often forms a tunnel. A number of clutches are laid in a season, the normal one being of three to four eggs which are laid on consecutive days, and incubation takes 12 to 13 days. The eggs are heavily blotched with brown or blackish-brown on a yellowish-brown ground. They have the appearance of being heavily mottled. The nests are difficult to locate, but if the area in which the birds have been calling regularly is thoroughly searched, one can find them with certainty. In my aviary as many as 16 eggs were laid by one female during the breeding season. When paired, the female may be seen to feed the male or to attract him to the place where the food is lying. Moreover, I have not always suspected the female of carrying out indiscriminate 'love affairs' but have found her rather devoted to her hen-pecked husband.

FOOD. Seeds, grain, green grass and small insects constitute the diet. The birds usually feed in the early morning and late evening.

PHEASANT-TAILED JAÇANA

Gujerati Name—Jal Manjār

Hydrophasianus chirurgus SCOPOLI

See Coloured Plate 15.

SIZE. Excluding the long, pointed tail, about that of the Partridge.

IDENTIFICATION. A black and white Wader with a long black tail, and slender and long legs, toes and nails. The head and upper-breast are white except for the nape which is yellow. The bill is greyish and the tail has two distinct long black feathers; the wing-feathers are white mixed with black, and the lower-parts are black to chocolate. During Winter, the bird assumes rather an inconspicuous plumage, losing its long black tail-feathers. The legs are green. The long toes allow the weight of the body to be spread-out on a larger area, and hence the bird is able to walk with ease on the leaves of lotus and other floating water-plants. This water-bird is fairly conspicuous on account of its black and white dress which is prominent during the breeding season.

NOTES. The student should look for it from June to October in pools, small tanks, and lakes where there are plenty of reeds, rushes, floating weeds, lilies and lotuses. Just before the rains the birds arrive in pairs and small groups, and take up their quarters on lakes and rivers. When heavy rains break, they are quite at home, moving from one end of the lake to another where food is

abundant. When flushed, they emit a cat-like *meow*, reminiscent of the Brahminy Kite. They are pugnacious and will not allow rivals to come close. Once they have established themselves, however, they do not mind other pairs visiting the same pool. On the average, the female is slightly larger, but this difference can only be observed when she is seen close to a male. Young birds are less black, have a rufous tinge, and are barred on the back. The Pheasant-tailed Jaçanas are not uncommon from May to March, neither are they very shy. The flight is a slow flapping one; the birds reluctantly leave the patch of water in which they are settled, but when continuously disturbed, they circle up in the air, and the whole flock, if there are many, departs. However, I have seen them return and settle in the same place as soon as they feel it is safe. On large lakes, they move to safer areas if disturbed.

DISTRIBUTION. Most of India including Kutch, Gujerat and practically the whole of Saurashtra. The bird is a local migrant and breeds in Saurashtra.

NESTING. Season—June to October, the principal months being July, August and September. The nest is a floating one, made of reeds and leaves. It is small and hardly noticeable, like a piece of weed or a clump of mud on some reeds. There is hardly any nest-cavity, the eggs being placed on bits of reeds or aquatic plants. It is so low that the eggs often appear to touch the water, and the fact that they are actually incubated is remarkable. Four eggs form the normal clutch, but three are often laid and sometimes two; they are pointed at one end and rounded at the other. They vary in colour from khaki to dark chocolate and sometimes to olive-brown. The birds prefer small ponds, shallow jheels, and rivers full of floating plants and reeds to nest in. The mating often takes place near the nest-site and is rather a prolonged affair, the male balancing on the female for some time.

FOOD. Water-snails, aquatic plants, and their seeds. These birds often feed at the water's edge or in the water like Moorhens. During the hot weather, they are only seen on lakes and perennial rivers.

CRAB PLOVER

Gujerati Name—Karachalā-Khā

Dromas ardeola PAYKULL

See Coloured Plate 9.

SIZE. About that of the Stone Curlew.

IDENTIFICATION. Distinguished by its black and white plumage, much like that of an Avocet with which it can be confused from a long distance. The bill is more like that of the Great Stone Curlew and not upturned or thin as in the

Avocet. Bill and eyes, blackish-brown; legs, olive-grey to bluish-grey. Young birds are more greyish, especially on the tail. Sexes alike.

NOTES. The Crab Plover is rarely seen on our coastline and is rather shy, taking wing from a great distance. It may be seen at high tide. I observed it occasionally at Hathab. Three birds were seen at Gogo in June, 1953. This is a rare Winter migrant.

DISTRIBUTION. From the Red Sea to the Persian Gulf, and again from Ceylon to the Bay of Bengal and Malaya. Breeding on islands. Found sporadically along the Indian coastline and rare in Saurashtra.

FOOD. Chiefly crabs.

INDIAN STONE CURLEW

Gujerati Name—Chakvā-Chakvi

Burhinus oedicnemus indicus SALVADORI

See Coloured Plate 7.

SIZE. Somewhat larger than the Partridge and more leggy.

IDENTIFICATION. This bird has grey-brown upper-plumage, the lower-plumage being dull white, and the head and neck to breast being khaki-brown with dark blackish-brown streaks. The head is comparatively large, and the golden-yellow eyes are big and round. The pointed bill is yellow at the base but blackish at the tip. On the wing-coverts there is a dull white and dark brown bar which readily identifies the bird. The long legs are yellow to pale yellow. Sexes alike.

NOTES. The Stone Curlew is found in fallow country, preferring open fields, 'vids,' fruit orchards, forest and scrub jungle. It is also a bird of stony hills and thorny bushes. It prefers seclusion most of the day, resting where its colour matches the ground. It camouflages perfectly, and when immobile, it is very hard to discern against its natural background. In habits it is crepuscular and on the move during early mornings and late evenings. It feeds during the night, flying to its favourable feeding grounds at dusk. It is usually seen in pairs, but also in groups of five or six, either together or scattered about in a small area. Although passive during the daytime, the birds have vigilant eyesight and on the slightest approach of danger, they squat and flatten themselves on the ground. But if a bird feels it is being watched, it will run and then squat again until flushed. It is very regular in habits and, if undisturbed, will visit the same resting ground daily. I have found birds remaining in one particular area for

years and rearing the young in the same patch of ground season after season. The call is a crescendo of short sharp whistles, ending in a double one which is rather prolonged : *pik-pik-pik-pik-pee-pee-wik-pee-pee-wik*. It is heard during the day but more often in the evening and at moonlight nights, especially during the breeding season. The flight is straight, and the wing-beats are slow and irregular, sometimes rapid in the beginning and then suddenly slowed down to normal. The birds are good runners and will often escape notice by running, especially in the jungle. However, they are not shy when near cultivation, for there they allow fairly close approach. The Stone Curlew, when attacked by Hawks or Falcons, assumes a very defiant and bluffing attitude. It stands erect and, stretching out its neck upwards, it calls violently with the bill open ; at the same time it raises its feathers and opens the wings to their full extent, all the while facing the enemy. This attitude is also adopted in defence of the eggs. While flying, it often drops to the ground when attacked by Falcons and, finding no other way of escape, resorts to bluffing which often succeeds. The bird, when approached diagonally and conscious that it has not been seen, very slowly turns towards the danger in a crouching position in order to camouflage itself.

DISTRIBUTION. Fairly common and found practically throughout India including Gujerat, Kutch and Saurashtra. Resident.

NESTING. Season—March to October. Most birds lay during the hot months : April to June. At the commencement of the breeding season, pairs may be heard calling frequently at daytime and at night. The nest is a mere scrape on the ground and, as often as not, no attempt is made to build a nest, the eggs being laid on the bare ground. The nest or eggs are found in the open under a solitary thorny tree or in scrub jungle or in fruit groves such as Mango orchards, etc., where there is little disturbance. The eggs are not laid in thick undergrowth or long grass, and very rarely does one find a clutch in short grass; perhaps it is a second clutch laid during the rainy season. Two eggs are laid; they are khaki-brown, mixed with a little grey, and heavily blotched with black and sepia-brown. Some eggs have a dusty off-white ground. They match perfectly the ground on which they are deposited, and it is difficult to see them even at close quarters. Both birds incubate. One bird keeps guard while the other sits. As soon as it scents danger, the sitting bird silently leaves the eggs and shams a broken wing to dupe the enemy. When it has young, this dodge is frequently resorted to. At times, the parent bird adopts a squatting posture as if sitting on eggs in order to misguide the intruder. The young, when warned by their parents, remain flat on the ground and 'freeze', making no attempt to run or move even when picked up. Movement is the greatest betrayer, and instinctively they will 'freeze' as if dead till they hear their parents' safety call. This behaviour is in no way restricted to this bird, being characteristic of

most ground-nesting birds. The young camouflage wonderfully well, and they are very difficult to spot even when lying just under one's nose.

FOOD. Insects and grain. The birds feed at dusk and during the night. They are often seen flying at or after sunset to their feeding grounds and returning before dawn. I have often seen them alighting on my lawn after dark in front of the house. Their large round eyes appear well-adapted to a nocturnal life.

GREAT STONE CURLEW

Gujerati Name—Moṭō Chakvā-Chakvi

Burhinus recurvirostris CUVIER

See Coloured Plate 16 and Plate 42.

SIZE. About that of a domestic hen.

IDENTIFICATION. This bird resembles the last in form, but it is much larger and has a more uniform light cement-grey colour. It is readily distinguished by the slightly upturned lower-mandible and by conspicuous dark stripes on the head and face. One stripe starts from the back of the eye to the nape, and the other, a shorter one, from the base of the bill. As in the last bird, the eyes are large and round, and greenish to golden-yellow in colour. The wing-coverts are darker and the grey band is more conspicuous. The bill is yellowish-green at the base and distinctly blacker at the end of the lower-mandible. The under-parts are whitish, and the legs pale yellow to almost light greyish-white. The tail is fairly short and rests in line with the wings, protruding somewhat when the bird is standing. In flight, a black and white patch on the wings is noticeable, and the outspread tail shows the same colours.

NOTES. This bird, unlike the last species, prefers the proximity of water and hence it is found mostly beside rivers and lakes, and amongst rocks and sand on the seashore. When attacked by Falcons or Hawks, it resorts to camouflaging and bluffing in the same manner as the Indian Stone Curlew. However, it is rarely killed, and its habits of always flying over water when flushed makes it a more difficult prey. It has a soft and high-pitched whistle which is generally used as an alarm call. This can often be heard at great distances, especially over water. However, the Great Stone Curlew is a more silent bird than the last species and only leaves the water's edge at dusk to visit its feeding grounds. During the breeding season, rival pairs call to each other frequently. They are sometimes seen some distance away from the water-line when the tide is out. When flushed, the flight is rather jerky owing to sudden and rapid strokes of the wing which appear rather stiff, but when in normal flight, the bird has a steady wing-beat, almost a half glide and half wing-stroke.

It is not as easy to approach as the Indian Stone Curlew but, strange to say, one can get as close as 25 feet in a car without disturbing it. During the day, groups of birds may be seen settled on the seashore.

DISTRIBUTION. The whole of India including Kutch, Gujerat and Saurashtra. Resident.

NESTING. Season—February to June. Rarely have I found eggs as late as September or October. Two eggs are laid and no attempt at building a nest is made; sometimes it is a mere scrape or not even a scrape. The site varies; most birds lay on small islands or islets on lakes or at the water's edge, always preferring the rocky areas. Some eggs are laid on the sand; this applies to birds breeding on the sea coast and river-beds. The eggs are buffy-white, streaked and heavily blotched at the larger end with blackish-brown or sepia. Some eggs are well-marked, others have a more greyish-white or ochre ground colour and are lightly marked; many that I have seen had marks of mud and white excreta which matched well with the surrounding ground. Both birds incubate. They are very vigilant during nesting, and become very suspicious when one is looking for their eggs. When approached, the parent bird leaves the nest from a long distance, seldom, if at all, betraying signs of uneasiness. It will not return to the nest for long. During courtship, the birds stiffen themselves, raising their posteriors.

FOOD. Insects, molluscs and green food. However, I have known them to devour the eggs of the Kentish Plover. (See J.B.N.H.S., Vol. 48, No. 4, Page 809.) They feed during the dark hours and are even more nocturnal than the last species. A bird may be seen flying away from lakes at dusk in search of feeding grounds.

OYSTER-CATCHER

Gujerati Name—Dariāi Abalakh

Haematopus ostralegus LINNAEUS

See Coloured Plate 16.

SIZE. Rather larger than the Partridge.

IDENTIFICATION. A fairly large black and white bird with a long bright red bill and orange-red or plumbeous-grey legs. Eyes, black with red rims; head, black; sides of neck and throat, white; a broad black band on chest; rest of underparts, white; wings, black and white; upper tail-coverts and back, white; rest of plumage, black. In Summer adult plumage, the sides of neck and throat are black. These birds fly along the coast and just above the surface of water.

NOTES. Oyster-Catchers are generally found on the seashore either in pairs or in threes or in groups of a dozen or more birds, usually at the water's edge. On the whole, they are shy, as are most of our Shore Birds, and always on the move except when resting. The Oyster-Catcher is one of our earliest Shore Birds with the exception of, perhaps, the Ringed Plover and Sandpipers who come in August. It is easily recognised by its conspicuous pied plumage. It emits a high pitched whistle and another one like the double whistle of the Whistling Teal. The Oyster-Catcher on our sea coast is not always to be seen except in its favourite places which it visits regularly. While the birds are on migration, I have never seen them stay in one particular place for long and they always appear on the move. Nevertheless, they seem to prefer certain shores or sandy beaches to others and I have seen them every year at particular stretches of the coast. On the whole, they prefer sand and reefs rather than mud. They are inclined to be wary and never allow the close observation that the rest of our Shore Birds permit. And yet a solitary bird allowed me to approach it within 30 yards while it was busy feeding and driving away a Whimbrel.

DISTRIBUTION. Breeding in Europe and Northern Asia, and migrating south to the shores of India. Uncommon in Saurashtra but a regular passing migrant on the sea coast, arriving in August and leaving in April. Some birds seen at Gogo in June, 1953, were in Summer adult plumage.

FOOD. Crustaceans, molluscs, etc. While feeding, the birds probe their straight and stout bills into the sand, and then walk along the water's edge seeking soft sandy patches. They are also seen on rocky beds. They often separate while feeding and come up the sandy beach though never going far from the sea. They are fast walkers, stopping now and then to feed. While feeding, they do not hesitate to drive away Whimbrels and Curlews from their favourite feeding grounds.

SOCIABLE LAPWING

Gujerati Name—Maltāvḍi Tīṭoḍi

Chettusia gregaria PALLAS

SIZE. About that of the Partridge; slightly larger than the White-tailed Lapwing.

IDENTIFICATION. Much like a Courser in general appearance, but larger. Forehead and supercilium, white; a black eye-stripe reaching upto the nape present; crown, black; chin, white; upper-parts, greyish-brown; breast, ash-grey; wings, black; under-parts, chestnut and black; abdomen and vent, white; tail,

white with a subterminal black band; bill and legs, black. In Winter, crown and breast, khaki.

NOTES. This is a sociable bird as its name implies, and it is seen in small flocks, being partial to ploughed fields and open fallow land. It is an irregular visitor with us and is not common; it is usually seen during the cold months. It is not as active a bird as the Courser from which it can be distinguished by its black legs and black band on the white tail. In flight, the white secondaries are conspicuous.

DISTRIBUTION. Breeding in South Eastern Russia, and migrating south to North Africa and India including Kutch and Gujerat. Uncommon in Saurashtra.

FOOD. Insects and grain.

WHITE-TAILED LAPWING

Gujerati Name—Saféd Pūnchhi Tīṭoḍi

Chettusia leucura LICHTENSTEIN

SIZE. About that of the Partridge.

IDENTIFICATION. This bird is much like the Yellow-wattled Lapwing in general appearance but can be distinguished by its completely white tail and the absence of wattles on the face. While flying, a black bar is visible on the wings. Bill, black; legs, yellow. It has no black cap which is another distinguishing mark separating it from the Yellow-wattled Lapwing. The call is a soft whistle; it also emits a *chee-viz* call like that of a Shikra.

NOTES. In habits, it is more of a marsh bird, keeping to jheels and lakes. It is slightly shy when approached, and sluggish in its movements. I have never seen large flocks but only pairs and even single birds.

DISTRIBUTION. Breeding in Mesopotamia, Persia and Turkestan, and migrating to North Africa and India including Kutch, Gujerat and Saurashtra during the Winter months. It is uncommon.

FOOD. Insects and grain.

RED-WATTLED LAPWING

Gujerati Name—Titodi

Hoplopterus indicus indicus BODDAERT

See Coloured Plate 16.

SIZE. Slightly larger than the Partridge.

IDENTIFICATION. This common bird which needs no description is found in open and cultivated fields and forest land as well as on the sea coast. In the countryside, every 'wādi' has its pair of Lapwings. They also enter towns and villages where they become very tame and confiding. Their way of walking a few steps and then bending down is characteristic of their feeding habits. During the breeding season they go in pairs, but in the Winter months they congregate in flocks and I have seen over 50 birds together. This Lapwing has a number of calls of which the common one is *tee-tee-to-which, tee-tee-to-which* and an alarm call *tee*. The mating call of the female is short and quickly repeated which is difficult to describe, something like a *tit-tit-tit-tit*. The flight is slow, and the wings give an impression as if they are only half beating.

NOTES. When pursued by a Hawk, the bird can swerve and mount into the sky fairly rapidly but, if there is a pool close by, it will invariably take refuge by dropping into the water, and, if hard pressed, it will even take cover in a bush or haystack. Normally, the bird emits its characteristic alarm call as soon as it suspects danger. When Falcons or Eagles are soaring overhead, it droops forward into a half-sitting posture, crouching and with the posterior raised; it always turns its body slowly, keeping the anterior portion turned away from the direction of danger. In rural areas, the Lapwing is a friend of the farmer, always at his side to pick up the grubs or insects that are disturbed. I have many times seen these birds a few feet away from a peasant who was watering his vegetables, waiting for worms and insects to be uncovered or forced to come out from their retreat. Another sight which impressed me much was in a desert area where a Lapwing was sharing the shade of a solitary stunted tree with an old woman who was sitting only a foot away from the bird.

DISTRIBUTION. The whole of India and Saurashtra. Resident.

NESTING. Season—April to August. It usually nests in open country, but it is interesting to note that I found it breeding in mixed deciduous forest in the Gir on rock slabs in river-beds. The nest is made of small pebbles, and the eggs are laid in a depression. When it is placed in ploughed fields or on soft ground, the pebbles form a kind of foundation, thus protecting the eggs from sinking into soft earth or mud during the rains. The nest is always made on the ground either near or far from water, though its vicinity is preferred. The common belief that the Lapwings select high ground for nesting when the

Monsoon is going to be heavy is false. But they do select high ground in areas where there is likelihood of perennial flooding, and I have seen them select such sites when close to lakes and creeks. However, in spite of this, the eggs do get washed away owing to excessive rains. The selection of the site varies considerably, some birds nesting even in compounds in cities. I have known of a nest placed between rails at a Railway Station yard. Four eggs form the normal clutch but three are often laid. The pointed ends are always placed inwards or downwards. The eggs are mottled black and khaki-brown and vary a lot, some being marked more heavily than others. One clutch which was found on dry and caky mud of a grey colour was unique in being finely marked and having the same grey ground colour. The disruptive pattern of the eggs makes them difficult to be picked out from their natural environments. The incubation period is 29 days. When some danger in shape of a Man or animal threatens the nest while incubation is in progress, the sitting bird slowly creeps away to some distance and then both the birds begin calling to lure the enemy away from the nest. However, when Birds of Prey or Crows are flying overhead, the parent bird crouches on the eggs; but, if they are seen at a distance, it leaves the nest to attack. These Lapwings are cunning enough to remain silent when an intruder is close to the eggs, but no sooner has he passed them, they suddenly start calling vigorously and alighting in front of him to attract him further away. When they have young, they feign the injury of a broken wing and act as if they are wounded, thus luring the threatening enemy away. However, the birds nesting amongst habitation, where Man is a friend, allow close approach. The young in down are grey and white, and have a blackish-grey crown. The female incubates most of the time but the male assists her a good deal.

FOOD. Insects and grain.

YELLOW-WATTLED LAPWING

Gujerati Name—Pārsana Ṭiṭoḍi

Lobipluvius malabaricus BODDAERT

See Coloured Plate 16.

SIZE. About that of the Partridge.

IDENTIFICATION. Similar to the Red-wattled Lapwing in many ways, but smaller. It, however, differs in having a yellow orbital skin and wattle, and in lacking the conspicuous black breast and neck stripe. Crown and bill, black; eyes, pale yellow; legs, yellow; upper plumage, sandy-brown; lower plumage, white; breast, khaki-grey; tail, white with a black subterminal band.

NOTES. Although common, the bird is not as abundant as the Red-wattled Lapwing. On the sea coast, however, it is commoner in places. In general habits, it is more partial to fallow land than cultivation. It also occurs in open patches in forest land away from water. I found it nesting in open glades in the Gir Forest. The 'Parsons', as they are commonly known, are not shy except when migrating; they are then seen flying high and calling plaintively as they move from one place to another. Truly speaking, however, they are not migratory but only local migrants during and after the Monsoon. From October to February they are seen in small flocks. They are active fliers and can rise rapidly. Falcons successful in capturing the Red-wattled Lapwing invariably fail with the 'Parson'. I once saw a pair of wild Laggar Falcons ring up behind a 'Parson' Lapwing until the three birds were mere specks; finally, the Falcons gave up the chase. To escape, the Yellow-wattled Lapwings much depend upon their power of flight and, unlike the last species, they seldom, if at all, take immediate refuge in water. The call is slightly shriller than that of the Red-wattled Lapwing and there is a double note which sounds like a *tee-which* and is rather drawn out. When perturbed or while defending its eggs, they emit a call like a *tee-which-which-which-which*, quickly repeated.

DISTRIBUTION. The whole of India and resident throughout Saurashtra.

NESTING. Season—March to August. The nest is similar to that of the common Red-wattled Lapwing but smaller. Most nests are found on fallow land rather than in ploughed fields. On the whole, more birds breed on the coastal belt than inland. I have seen nests made in dry cow dung, the eggs camouflaging perfectly. Three to four eggs form the normal clutch. They are similar to those of the Red-wattled Lapwing but smaller and, on the average, more boldly marked. Some nests do not have the gravel foundation which is invariably found in the common Lapwing's nest. Both parents guard the eggs and young, scrupulously driving away the attacks by Crows which are their greatest enemies. The bird shows speed as it pursues and dives upon the Crows, emitting its characteristic calls. As soon as a Hawk or other Bird of Prey is seen flying at a distance, the parents leave the nest to attack and drive it away. The male assists the female in incubating for merely a short time during the hot hours of the day.

FOOD. Insects and grain. On the whole, the bird is less partial to water than the common Red-wattled Lapwing.

GREY PLOVER

Gujerati Name—Bāṭaṇa Ṭiṭoḍi

Pluvialis squatarola squatarola LINNAEUS

See Coloured Plate 16.

SIZE. Slightly smaller than the Partridge.

IDENTIFICATION. In Winter plumage, the birds have mottled khaki-grey upper-parts. The bill is black, the legs are lead-grey or blackish and the eyes are brown. The tail is barred but the upper tail-coverts are white and clearly seen in flight. The lower-parts are white. As it flies, the bird is immediately recognised by the black patch under the wing. In habits, it is solitary and thus often separated from other Shore Birds. However, it may sometimes be seen in small groups. In Summer plumage, the male assumes a black face and breast with a white forehead and sides of neck, the upper-parts being silver-grey and barred blackish and not golden as in the Golden Plover. In hand, it is distinguished from the Golden Plover by the presence of a very small hind-toe. In the field, it looks larger and plumper, and is less sociable but tamer than the Golden Plover. It is very rarely seen in full plumage except in April and May or as early as September.

NOTES. Its habit of keeping to water's edge and its sluggish movements are very noticeable. It walks and then stops, lifting up one leg, and then walks again in typical Lapwing fashion. At times it is rather shy but I have often approached it as close as 30 yards. The call is a soft, plaintive whistle. The bird is a regular visitor to our coast and fairly common from September to April. The flight is fast and strong. This is a typical Shore Bird.

DISTRIBUTION. The Arctic Circle, Greenland and Siberia, and migrating southwards to Southern Europe, Africa and India including Kutch and Gujerat. Common on the Saurashtra sea coast.

FOOD. Worms, crustaceans, insects and molluscs. The bird feeds on the water's edge, often wading in.

EASTERN GOLDEN PLOVER

Gujerati Name—Sonéri Bāṭaṇa Ṭiṭoḍi

Pluvialis dominica fulva GMELIN

See Coloured Plate 16.

SIZE. About that of the Partridge.

IDENTIFICATION. Similar in shape and general colouring to the Grey Plover, but easily distinguished by its yellow or golden markings on the upper-

parts which are mottled with arrow-head markings. In full plumage, the head and breast are black with a white marginal stripe running from the eyes across the sides of the body. In Winter plumage, the black portions are less visible, or absent, and remain as a small patch, if at all, and the white of the side of the neck and flanks disappears, with the chin and throat becoming whitish. The bill and legs are black, and the eyes are blackish-brown. There is an absence of the small hind-toe which is found in the Grey Plover.

NOTES. The Golden Plover is a migrant and one of the greatest travellers among birds. We see these birds arrive at about 'Dashera' time and they come and go throughout the Winter months. Flocks of 15 to 500 birds may be seen on the sea coast, and they often enter fields some miles inland while feeding. They are very fast and strong on the wing, and the student should not mistake them for the Ruff. They are in full dress between April and July and I have often shot them in full plumage while feeding either inland or on the coast. The Golden Plover is a regular passing migrant, being found in small numbers at odd times of the year between September and June. Compared with the Grey Plover, not only is it uncommon but more shy and swifter in flight; it keeps in flocks and rarely does one find a solitary bird on the coast as is the case with the larger species. The call is a double note, viz., *thuu-eeep* or *tu-it*, much like that of the Kentish Plover. It is a good table bird.

DISTRIBUTION. Breeding in Northern Siberia and North America, and migrating south to India, China and Australia. A regular passing migrant in Saurashtra, Kutch and Gujerat.

FOOD. Crustaceans, molluscs and grain. It prefers rocky coastline, but is also found on mud-flats, inland fields and pastures, and occasionally on lakes.

EUROPEAN LITTLE RINGED PLOVER

Gujerati Name—Vilāyati Jīni Tīṭoḍi

Charadrius dubius curonicus GMELIN

SIZE. About that of the Jerdon's Ringed Plover.

IDENTIFICATION. The yellow on the bill is less clear, and the orbital skin or rim around the eyes is less well-defined than in the Jerdon's Ringed Plover, but in every other way they are similar except that the European Little Ringed Plover is perhaps slightly larger. The legs are normally yellowish. Young birds have a brown band on the breast.

NOTES. I have seen these Plovers arrive in July and August in fairly large numbers. They are found on muddy shores and mud-flats on the coast and on inland lakes. Shortly after arrival, they are seen running and feeding on shallow salt-water pools or on the seashore. They are very active birds and more shy than Jerdon's Plovers with which I have seen them mixing and feeding. The birds emit a sharp whistle, viz., *teet-teet*, as they fly. At Jamnagar, I could clearly differentiate the two sub-species while observing them on the Ranjit Sagar Lake in April before their departure for their breeding areas. I have also recorded the larger Ringed Plover, *Charadrius hiaticula*. In this species, the legs are yellowish-orange which is a distinguishing feature, coupled with the white wing-bar when seen in flight. There is no conspicuous yellow rim to the eyes. The base of the bill is orange.

DISTRIBUTION. Breeding in Europe and Northern Asia to Kashmir, and found in almost all parts of Asia; also from the African coast to Japan. It is a Winter migrant to the plains of India and Saurashtra.

FOOD. Same as the Jerdon's Little Ringed Plover.

JERDON'S LITTLE RINGED PLOVER

Gujerati Name—Jerdon-ni Jini Titodi

Charadrius dubius jerdoni LEGGE

See Coloured Plate 16 and Plate 43.

SIZE. Slightly less than the Grey Quail.

IDENTIFICATION. This is our smallest Plover. Bill, short and black with an orange-yellow base; forehead, white with a black patch above it; eyes, black with a broad yellow rim and a fairly broad eye-stripe which runs from the bill to behind the eyes; crown, brown; a conspicuous white collar and an equally conspicuous black band on the breast; rest of breast and lower-parts, pure white; wings, brown; tail, brown with white tips forming a band when spread-out; legs, yellowish to dark orange or light brown. Immature birds and adult birds in Winter plumage have the upper-parts and pectoral band brown. This little Plover is distinguished from the Kentish Plover by the undivided black band on the breast and the yellow ring round the eyes as well as by the conspicuous black patch above the white forehead. Sexes alike. In the breeding season, the orbital skin is slightly swollen, giving the bird an appearance as if it is wearing goggles.

NOTES. The Jerdon's Ringed Plover is fairly common on the sea coast as well as on our lakes and rivers. It is not a shy bird, allowing close approach to as near as

15 to 20 feet. Its movements are much like those of the Red-wattled Lapwing. It is seen on the smallest puddles. The flight is fast with a rapid wing-beat. These birds are seen in flocks and pairs, but solitary ones are occasionally met with. On the sea coast, when the tide is low, small flocks may be seen near the puddles of water left on the mud-flats and at the mouths of rivers. They are, however, more of inland birds and are seen mostly on pools close to large rivers, sandy river-beds, freshwater streams and lakes. From February to April and early May, these Plovers are often seen courting when one or two males chase a female in the air. The males are then very active and noisy in challenging rivals and courting females. There is much chasing of one another, the birds frequently turning in the air with outstretched wings. The call is a double whistle. The nuptial flights are often seen when the birds chase each other in zigzag manner and they frequently utter a trilling note *těě-těě-těě*, ending with a *teeū-teeū* and also a short *trooi-trooi*.

DISTRIBUTION. The whole of India and Saurashtra. Resident as well as a local migrant in most parts of the country including Saurashtra. It breeds on sandy river-beds and shores of lakes.

NESTING. Season—February to June. The nest is a scrape in the sand or in a natural depression. It is sometimes lined with small grit or shells. The birds prefer clear sand or shingle to nest in rather than muddy sand or shore. Large stretches of shingle on the riverside is what they prefer. I have noticed that on the lakeside the birds choose small islets or pebbly ground some distance away from the shore. Both parents keep a vigilant guard over the nest site, and feign wing injury to draw away any danger that may approach the nest. The Red-headed Merlin, I found, was a great enemy of this species in and out of the breeding season. Three eggs form the usual clutch; they vary in colour from khaki to grey and are finely spotted with brownish-grey. They are difficult to find and the young still more so. Both sexes incubate and are devoted parents. The young in down have yellow orbital skin and bill, the latter tipped with black; their eyes are brown, the feet are dull yellow, the body is buffy-brown with a white collar and the under-parts are whitish, and there is a black patch on the hind-crown and breast. Young birds in Winter are pale brown above with the black and white markings on the breast and head subdued, the former often replaced by brown; the legs are pale fleshy-yellow.

FOOD. Crustaceans, insects and animal life found at the water's edge as well as in fields away from the water. The birds feed in the same way as do the Red-wattled Lapwings. While feeding, they move their feet in a characteristic manner in order to flush minute aquatic life.

KENTISH PLOVER

Gujerati Name—Dhongili

Charadrius alexandrinus LINNAEUS

See Coloured Plate 16.

SIZE. About that of a Quail.

IDENTIFICATION. Upper-parts, brown with a slight tinge of rufous on the hind-crown when seen in the sun; this is often obsolete. A black eye-streak present; forehead, white with a faint black bar above it; rest of head, brown; breast, white, extending upto the neck; side of breast having a short black bar or spot which does not meet at the centre and appears at times like two black bands or broad spots; rest of lower-parts from chin, white. Eyes and legs, black. In the male, the black spots on the side of the breast are bold, the female having light brown patches. Otherwise, the sexes are alike. In Winter, the forehead appears more brownish but the dark patches on the breast and sides are absent. In Winter plumage, it is distinguished from the Lesser Sand Plover by the faint white neck-band and by the distinct white outer tail-feathers. In breeding plumage, the Kentish Plover is distinguished from the Little Ringed Plover by the black breast-bar not meeting at the centre, and the absence of yellow on the legs and around the eyes. In Winter, young birds are light brown with a faint white collar, and may easily be mistaken for young Ringed Plovers. The student should observe the legs of the Kentish Plover which are always blackish or lead-grey.

NOTES. The bird is found on the shore and sometimes a few miles inland, but unlike the Little Ringed Plover, it is much more of a coastal bird. In Summer, these Plovers remain in pairs or in small flocks, and to see 15 to 50 birds together is not uncommon. They also visit barren wastes and have a preference for mud-flats either near or away from the sea coast. They have a habit of running in a crouching manner. The flight is rapid and straight, the birds flying low over the ground. In flight, the white wing-bar and the white outer tail-feathers are clearly seen. The call is a short whistle: *weet weet*. The alarm call note is a rapid *to-it to-it*, generally uttered during the breeding season. This is reminiscent of the croaking call of the Red-rumped Swallow. During Winter, odd birds may be seen intermingled with other Shore Birds and the close resemblance of this species to the Lesser Sand Plover is striking at that time.

DISTRIBUTION. Breeding in Europe, Western Asia, East Africa, Sind, probably Kutch, Gujarat and Saurashtra to Ceylon. It has been found breeding on the eastern and western coasts of Saurashtra. (See J.B.N.H.S. Vol. 46, No. 4, Page 728 and Vol. 48, No. 4, Page 809.) Harrington Bulkley found it breeding at Kharaghoda. (See J.B.N.H.S. Vol. VIII, Page 325.) Migrating south of its breeding range during Winter.

DISTRIBUTION. Breeding in Japan and Northern Asia, and migrating southwards to India and adjacent countries upto Australia. Regular migrant to Saurashtra, Kutch and Gujerat.

FOOD. Marine life and seeds. Sometimes seen feeding inland. Abundant on mud-flats. Being similar in habits to the last species, these birds may be seen feeding separately and engaged in what might be called duels, at their favourite feeding spots, e.g., salt-water puddles.

WHIMBREL

Gujerati Name—Nāni Khalili

Numenius phaeopus phaeopus LINNAEUS

See Coloured Plate 14.

SIZE. Somewhat bigger than the Partridge.

IDENTIFICATION. This is a small replica of the Curlew. It is distinguished by its smaller size, its shorter and less curved bill and the two broad dark stripes, instead of the thin streaks, of the crown, and also by its slightly darker colour. In habits, it is similar to the Curlew, but it is found inland in larger numbers and is comparatively less common on the sea coast. Sexes alike.

NOTES. When the birds arrive in August, they come in large flocks and I have recorded them in the Bhal area where there are extensive 'vids'. There they feed mostly on the harmful locusts and grasshoppers. Flocks of 300 to 400 birds are not uncommon at that time. The Whimbrel also hugs the coastline but often comes inland. On the shore, it mixes with the Curlew and is recognised by its typical sharp call which is a *tit-tit-tit-tit* or *titi-titi-titi*. This call gives the bird its local English name: 'Titteral'. It is a fast flier.

DISTRIBUTION. Breeding in North Europe and Siberia, and migrating southwards to North Africa, Arabia and the Persian Gulf to India including Gujerat, Kutch and Saurashtra.

FOOD. Same as the Curlew, with a little more of insect diet. Found further inland than the Curlew in search of food.

CURLEW

Gujerati Name—Vilāyati Khalili

Numenius arquata arquata LINNAEUS

See Coloured Plate 7.

SIZE. About that of the domestic hen.

IDENTIFICATION. Differs from the common Eastern Curlew in being browner above and having broader streaks on the lower-parts; the axillaries are boldly marked with blackish streaks in contrast to the pure white or finely streaked ones of the Eastern Curlew. Sexes alike.

NOTES. This bird is, on the average, longer and darker than the Eastern Curlew.

DISTRIBUTION. Europe and Africa to India and Ceylon. Migrant to Saurashtra; uncommon.

FOOD. Crabs, mud-gobies and such other marine life; also insects and worms.

EASTERN CURLEW

Gujerati Name—Khalili

Numenius arquata lineatus CUVIER

See Coloured Plate 14.

SIZE. About that of the domestic hen.

IDENTIFICATION. The Curlew is a khaki-brown bird and has a long downward curved bill like that of an Ibis, but comparatively longer; the base is fleshy-pink. The upper-parts are khaki with black markings and the lower-parts from the breast are white. The head, neck and breast are finely streaked with brown, these streaks being finer than in the last bird. The legs are fairly long and grey. The tail is short and barred. Sexes alike.

NOTES. The Eastern Curlew is seen on the sea coast and is abundant on the mud-flats during Winter. It also wanders inland to feed, and is then seen on lakes or in 'vids' some miles away from the coast. It arrives in August-September, but I have recorded the birds even in July on the Bhavnagar coast, approximately 50 to 60 in number. This is the usual number in which they come, but in the month of March, when they congregate for their return journey, I have seen as many as 500 or more birds. Curlews come from the North and fly southwards. That they follow the same route home is evident by their return flights. On migration, they traverse large stretches of desert

country known as the Bhal and the Rann of Kutch. While crossing deserts, they form a long chain, and fly in single file or in 'V'-formation. They are strong fliers and, though they appear rather slow, they are in reality fairly fast, especially when flying down wind. While feeding, they prefer solitude, often driving away other birds of their kind from their area. On account of this habit, they are then seen scattered on the seashore. But during the afternoon when they usually rest, a whole flock may cluster together, mixed with all other kinds of Shore Birds. A convenient sand bank or a promontory on the sea coast is their favourite resting place. While feeding, they are active and, on the whole, very shy and ready to fly away on the slightest suspicion. The call is a bubbling whistle which can be heard a great distance away, a flute-like call of a double note: *peoowee-peoowee*; this is often followed by short rapid notes of *peuit-peuit-peuit-peuit*. When flying on the sea coast, they generally take their course along the shore or over the sea, sometimes close to the surface of the water and not very high. Birds flying down wind gather speed as they come for their mid-day siesta.

DISTRIBUTION. Breeding in the Russian Steppes and West Siberia, and migrating southwards upto India (including Saurashtra, Kutch and Gujerat), China and East Indies. See migration route map 1. In Saurashtra, it is very common during Winter, especially on the coast. It is a post-Monsoon and Winter migrant, but some birds remain throughout the year where suitable conditions prevail. However, I have not so far found it breeding with us.

FOOD. Small crabs, molluscs, insects, worms and mud-gobies. The long curved bill is well-adapted for probing into the mud and the small holes made by the crabs and other marine life. When the tide is going out or coming in, Curlews are seen feeding separately on the mud-flats, running from one crab-hole to another. In search of food, they probe their bills deep into the mud or sand and, with an upward movement of the neck and bill, they extract food and swallow it, only to start again. They feed from the water's edge to the high tide line. The ebb or the incoming tide is the time when they are mostly seen feeding. During the afternoon they take their siesta. However, I have noticed that this mostly coincides with the high tide. Although most of the feeding activities are seen during mornings and evenings, there is no regularity as such. When travelling from one feeding ground to another, they never fly very high, 40 to 60 feet at the most, and many a time just over the surface of the water. As already mentioned, they are sometimes seen inland, up the mouths of rivers, on inland lakes, or in grass land feeding on insects. But, on the whole, they prefer the seashore, the mud-flats and sandy beaches being their favourite hunting grounds.

BLACK-TAILED GODWIT

Gujerati Name—Kālipūnchh Gadērā or Lāmbichānch

Limosa limosa limosa LINNAEUS

See Coloured Plate 17.

SIZE. Somewhat bigger than the Partridge.

IDENTIFICATION. A Wader with a slender, long bill. In most birds, the bill is turned very slightly upwards; it is fleshy-pink at the basal half and black towards the tip. The bird has long legs which are greyish and well-adapted for wading. The main identifying characteristic is the tail which has a broad black band, the rest of it being pure white. It is not long but the black subterminal band can be seen clearly in flight. The black primaries and the white wing-band are also conspicuous. The feet project well beyond the tail. In Winter, the bird has a rich brownish-grey head and breast while the upper-parts are plain greyish-brown, the lower-parts greyish-white and the wings blackish. The Summer plumage is reddish-brown with whitish lower-breast and flanks, sometimes with irregular barring; this is seen from March to May. The young birds are like adult birds in Winter plumage but with more reddish-brown neck and breast.

NOTES. The Black-tailed Godwit is found on lakes, pools and watercourses, but it prefers large shallow ponds where there is plenty of aquatic plants. It is often seen in brackish and freshwater pools and salt pans, and on the seashore. It is not found in very large numbers, and the largest flock I ever saw consisted of about 50 birds. Normally, only a few pairs are seen. The long neck, bill and legs are conspicuous in flight. The call is a *tioo*, uttered when flying. In April-May when the birds are about to leave, they may be seen fighting which they do by flapping their wings as if boxing, calling at the same time. Sometimes, a bird displays by gliding stiffly and fluttering its wings. These Godwits are found mostly during the cold months though some arrive as early as September or October. Of late, they have been seen staying with us as late as July and, strangely, in Winter plumage with an odd reddish-brown bird in Summer coat.

DISTRIBUTION. Breeding in Europe and Western Asia, and migrating to Africa and India including Kutch, Gujarat and the whole of Saurashtra. The bird is a regular migrant, arriving soon after the Monsoon and leaving usually in April or May but, sometimes, as late as July.

FOOD. Worms, molluscs, insects and aquatic life. The birds feed by probing the bill in mud or slime, much like a Snipe, and, while in deeper water, by ducking the head and neck completely. While actively feeding, they often emit a chuckling sound and raise their back-feathers. They feed singly or in groups of 30-40 birds. I have seen them playfully driving each other from places best for obtaining food. They are not shy and allow fairly close approach.

BAR-TAILED GODWIT

Gujerati Name—Pattāpūñchh Gadērā or Lāmbichāñch

Limosa lapponica lapponica LINNAEUS

SIZE. Somewhat bigger than the Partridge.

IDENTIFICATION. Similar to the Black-tailed Godwit but distinguished from it by bars on the tail instead of a broad black band, and by the upper-parts being mottled khaki much like the Curlew. Also, it is slightly smaller and the bill is a little more upturned and fleshy in colour. In flight, the barring of the tail is not at all conspicuous, the broad white wing-bar is either absent or replaced by a very thin one, and the feet project only a little beyond the tail.

NOTES. This bird is uncommon with us and a passing migrant to Kutch, Gujerat and South India. It emits a guttural croacking call, *krui-krui*, as it flies and it is thus easily distinguishable. This Godwit is rarely seen on inland waters but more often on the seashore. Single birds or a pair or two can be observed resting with other Shore Birds at high tide.

DISTRIBUTION. Breeding in Northern Europe and Central Asia, and migrating south to Africa and India. In Saurashtra, the bird arrives largely as a passing migrant in October and is rare. It may be seen mixed with other Waders at high tide, or on a freshwater stream, either singly or in pairs or in small groups. It is found in other parts of India during the Winter months.

FOOD. Same as the last species.

DUSKY REDSHANK

Gujerati Name—Rākhōdiyō Rātāpug

Tringa erythropus PALLAS

SIZE. Larger than the Snipe.

IDENTIFICATION. Distinguished in the field from the Redshank by its larger size, much darker smoky-black plumage and mottled appearance. The white triangular markings are visible on the upper-parts. On the wing, the white bar is absent and the secondaries appear barred with blackish-brown; the central tail-feathers are ash-coloured. The call is also distinctive, a rather harsh *chwee-chwee* or *tchuck*. In Winter, the birds have a clear barred appearance above, and below on the flanks, and are greyish-brown, somewhat resembling Redshanks in summer plumage but with a comparatively longer bill.

NOTES. Seldom met with except on jheels. They seem to have a preference for freshwater ponds and lakes.

DISTRIBUTION. Breeding in Northern Europe and Asia, and migrating southwards of its range, including coastal and inland waters of Northern India. Rare vagrant to Saurashtra.

FOOD. Same as the Redshank.

REDSHANK

Gujerati Name—Rātāpug

Tringa totanus LINNAEUS

See Coloured Plate 17.

SIZE. Larger than the Snipe.

IDENTIFICATION. Recognised by its orange-red (bright red in full breeding condition) legs and bill of which the basal portion is dull orange, the rest being black to the tip. The upper-parts are brownish mixed with fawn and black which give the bird a slightly mottled appearance, the flanks having almost a barred effect. During Winter, however, the dress is almost uniform khaki-grey. The eyes are brown, and a thin fawn supercilium can be seen. The breast and the under-parts are whitish, spotted and finely streaked with brown in varying degrees. In flight, the white rump and tail-coverts and a conspicuous white crescent on the secondaries are clearly visible. The call, as the bird rises, is a long *tyoo-tyoo*. When closely seen, the first primary shows a white shaft.

NOTES. The Redshank is a common visitor after the rains though some birds arrive even during the Monsoon. In Winter, they are seen abundantly on the coast and inland waters, mostly up the rivers and creeks. They are not very shy but, like most Shore Birds, resent close approach. Yet on inland streams, these very birds do permit one to approach fairly closely. The flight is rapid and they often fly low over the surface of the sea. They are generally seen in small flocks or in pairs on the seashore but odd birds are frequently encountered on inland waters. Pairs may be found in April and remain with us until the time to migrate arrives; then they congregate in flocks of 30 to 40 in number. Some birds stay with us until almost June or July. The Redshank remains on the Saurashtra coast long enough to be suspected of breeding, but I have so far found neither the eggs nor the young. I have seen pairs displaying to each other by flapping their wings and facing one another.

DISTRIBUTION. Breeding in Europe, Asia Minor, Tibet and Kashmir, and migrating south to India and the East Indies. Common in Saurashtra, Kutch and Gujerat, and a regular post-Monsoon migrant.

FOOD. Live food next to water and possibly seeds. A solitary bird or two may be seen feeding on inland streams with other Waders. On the seashore, they group together after feeding and mix with other species.

MARSH SANDPIPER

Gujerati Name—Gandāpug Tutvāri

Tringa stagnatilis BECHSTEIN

See Coloured Plate 17.

SIZE. About that of the Snipe.

IDENTIFICATION. The bird is recognised by the fact that it is larger than the Common, Green and Wood Sandpipers, and smaller than the Greenshank which it closely resembles and with which it can be sometimes confused. In Summer plumage, the upper-parts are sandy-grey, the head and neck are finely streaked with black, and the scapulars are almost barred; rump and back, white; tail, almost barred brown and grey; lower-parts, white; flanks, often barred or spotted. As a rule, most birds are seen with mottled upper-parts which is a combination of Winter and Summer plumages. As is the case with the Greenshank, the plumage is variable. In Winter, the forehead and the sides of the neck are white and unspotted and the upper-parts from the nape are almost pure grey mixed with pale brown, giving it the appearance of a grey and white bird. The sides of the breast are sometimes marked with brown. The bill is brown to blackish and, in many birds, slightly upturned, less noticeable than in the Greenshank. The legs are greenish to dark green, sometimes greenish-yellow. Sexes alike.

NOTES. This is a common Wader which is seen on streams and stagnant pools. In the countryside, it is mostly found during Winter, feeding with other Waders. Yet it has a certain individualistic behaviour which marks it off. I have seen it permit close approach. However, it is more wary at the time of the return migration. It rises fairly fast with a characteristic *twee-wee* or *twi-twi*. Once on the wing, it is very active. The Marsh Sandpiper is more of an inland bird generally seen singly or in small groups though it may gather in larger numbers on the sea coast, tidal pools and salt pans.

DISTRIBUTION. Breeding in S.E. Europe, across South Russia to Mongolia, and migrating south of its range to India including Western India.

Post-Monsoon and Winter migrant, leaving in April. Some birds have been noted in Bhavnagar in July.

FOOD. Insects, worms and molluscs. While feeding, the bird is often seen wading in water with the legs submerged to their full length. It prefers small streams, puddles, shallow pools and edges of lakes, and may also be seen close to salt pans.

GREENSHANK

Gujerati Name—Lilāpug or Tīmṭimā

Tringa nebularia GUNNERUS

See Coloured Plate 17.

SIZE. Slightly larger and taller than the Redshank.

IDENTIFICATION. A greyish-brown Wader with a fairly long bill, which is slightly upturned, and greenish-grey legs. Crown and nape, finely streaked with brown; eyes, black; upper-parts and wings, darker and having a barred or mottled appearance, but uniform pale grey-brown in Winter; back, rump, and lower-parts, white; tail, white and barred with brown; breast, slightly spotted and streaked, especially in Summer plumage; abdomen, white. However, the birds vary considerably in plumage. In flight, they are recognised by the white back and rump on the grey upper-parts and by the absence of the wing-bar.

NOTES. The Greenshank is usually seen on tidal creeks, mud-flats, the sea-shore, inland lakes, streams, ponds and rivers, either singly or in small flocks. It is, however, more commonly found on the coastal areas. It is usual to see a group of Greenshanks settled amongst Waders at high tide. During the afternoon, they sleep with one leg drawn up, like other Waders, and as the tide comes in they hop on one leg to get out of the deep water. They arrive just after the heavy rains and are found throughout the Winter months. Some birds remain with us during the hot season, even longer than the Redshank. I have, therefore, often suspected them of breeding fairly closely, but have never found their nests or young. They are not as shy as many of our Shore Birds but, once alarmed, they rise with a sharp call, viz., *tiv-tiv-tiv-tiv-tiv-tiv*. The flight is rapid. The birds often bob their heads up and down when suspicious. This characteristic is not restricted to the species as it is observed in other Shore Birds as well. The Peregrine Falcon preys upon it regularly during the Winter and Spring months.

DISTRIBUTION. Breeding in Europe and Northern Asia, and migrating south to Africa and most parts of India including Kutch, Gujarat and the whole of Saurashtra. It is common during Winter.

FOOD. Molluscs, crustaceans, insects, etc. The bird usually wades in shallow water. On the seashore, small pools on the mud-flats are its favourite feeding places. It is also found feeding in salty marshland, streams and ponds, often mixing with other Waders. It is, however, more often seen in company of Redshanks.

GREEN SANDPIPER

Gujerati Name—Lili Tutvāri

Tringa ochropus LINNAEUS

See Coloured Plate 15.

SIZE. About that of the Quail or Snipe.

IDENTIFICATION. A small Wader with blackish-brown wings and having small white specks on the wing-coverts; in the sun, the brown takes a greenish gloss. Lower-parts, white; breast, finely streaked with brown; tail, white and broadly barred with black. General appearance, dark brown during Winter; wings, uniformly dark coloured above and below. Distinguished from the Wood Sandpiper by its larger size ($9\frac{1}{2}$ "') and in having more white on the rump and outer tail-feathers, and also by its darker axillaries. Bill, blackish-brown; legs, olive-green when closely seen. In Summer plumage, the upper-parts are more greenish-grey, with a pale ring round the eyes. Sexes alike.

NOTES. The Green Sandpiper is found in marshy places and on the sea coast. Inland, it frequents lakesides, rivers, pools and streams, and even forested areas. I have noted it in the Gir Forest on streams in April. It rises rapidly in a zigzag manner and emits a sharp *tweet-weet-weet*.

DISTRIBUTION. Breeding in Europe and Northern Asia, and migrating south to Africa, throughout India and as far as the East Indies. Common in Saurashtra, Kutch and Gujerat during the cold months.

FOOD. Worms, molluscs, crustaceans and insects found in ponds, puddles and marshy places. Also, marine life.

WOOD SANDPIPER

Gujerati Name—Vana Tutvāri

Tringa glareola LINNAEUS

See Coloured Plate 15.

SIZE. About that of the Snipe.

IDENTIFICATION. Much like the Marsh and Common Sandpipers but with a more mottled appearance and distinguished by the white rump and finer and closer barring of the tail-feathers. The breast is spotted with brown and there is no wing-bar as in the Common Sandpiper. It is slightly smaller than the Green Sandpiper to which it bears much resemblance while it is larger than the Common Sandpiper. Upper-parts, dark olive-brown; lores, brown; a conspicuous supercilium present; bill, black; legs, yellowish-green or dark olive-brown; upper tail-coverts, white in contrast to those of the Common Sandpiper which are uniform brown. In habits, it is much the same as the Green Sandpiper and rather difficult to distinguish from it in the field during Winter. In hand and in flight, however, the whitish axillaries in contrast to the dark blackish ones of the Green Sandpiper are also a key to its recognition. In the field, the under-side of the wings appear greyish. As the bird rises, it emits a shrill *chiff-chiff-chiff*. Sexes alike.

NOTES. Wood Sandpipers are seen in swampy ground, streams and reedy ponds, lakesides, forests, and throughout the coastal belt. Like most of the Sandpipers, they prefer to remain solitary except when they join in small groups preparatory to migrating to their breeding grounds.

DISTRIBUTION. Breeding in Europe and Northern Asia, and migrating south of its range in Winter. A Common migrant to the Tropics including Saurashtra, Kutch, Gujerat and the rest of India.

FOOD. Live food in and near water.

WESTERN TEREK SANDPIPER

Gujerati Name—Tutvāri or Chaṇchaḷ

Tringa cinerea cinerea GÜLDENSTÄDT

See Coloured Plate 17.

SIZE. About that of the Quail or Snipe.

IDENTIFICATION. The bird can be recognised by its white forehead, slightly upturned black bill, and orange legs which appear short. The upper-parts are light olive-brown to grey-brown and the lower-parts are white.

NOTES. It is seen mostly on the seashore and is not normally found in flocks. At high tide, however, groups of them have been seen in fairly large numbers. Single birds are usually met with, mixed with other Shore Birds. The conspicuous legs and bill, and the comparatively active sprints while it is feeding, distinguish the Terek from other Waders on the seashore. It is a common and regular Winter visitor to our sea coast. In Saurashtra, the birds are attracted, during migration, by lakes not very far from the sea. Sexes alike.

DISTRIBUTION. Russia, Siberia, Africa, Arabia and the west coast of India. Common during post-Monsoon season, arriving in middle of September or early in October and remaining up to April on the coast of Saurashtra. Seen ubiquitously on the Eastern Saurashtra coastline. Non-resident.

FOOD. Marine life. The bird prefers mud-flats where it is seen racing after live food. Very active.

COMMON SANDPIPER

Gujerati Name—Sāmānya Tutvāri

Actitis hypoleucos LINNAEUS

See Coloured Plate 17.

SIZE. Slightly smaller than the Snipe.

IDENTIFICATION. Upper-parts, olive-brown, appearing greenish-grey to metallic purple-green in bright sunlight; upper-breast, streaked with brown which, during Winter, becomes almost uniform dull greyish-green to brownish-grey; rest of lower-parts, white; tail, brown, tipped white and faintly barred with white on the outer feathers; rump, brown. The Common Sandpiper is immediately distinguished from the Wood and Green Sandpipers by its smaller size ($7\frac{3}{4}$ "), the uniform brown colour of the rump, and the inconspicuous barring of the tail which is visible when the bird is flushed. Supercilium, whitish; eyes, brown and with a thin white rim; legs, yellowish-green to greyish-green. It differs from Wood and Green Sandpipers in its habit of wagging the tail and swaying the body up and down more frequently. Also, the legs appear shorter than in the two species mentioned, and the shape of the body is more round. The flight is quick and having stiff intermittent wing-beats; there is a narrow white wing-bar visible, and the bird rises in a zigzag manner. The bright greenish colouring of its plumage, when seen in the sun, may cause it to be confused with the Green Sandpiper. The call is a repeated shrill *twee-wee-wee*. Sexes alike.

NOTES. This bird is seen on pools, lakes, streams and rivers, and on the seashore. It is commonly found during Winter, arriving after the Monsoon, and

sometimes earlier, and departing in April or May. Some birds are seen to remain in various parts of the Peninsula almost throughout the year.

DISTRIBUTION. Breeding in Europe, Siberia, Japan and Kashmir, and migrating south of its range to India, including Kutch, Gujerat and Saurashtra, and the neighbouring countries.

FOOD. Live food on the waterside. The birds feed in puddles on the coast, rivers, lakes and small streams. When disturbed, they do not fly far, but flit to another corner and settle on the edge of the water. At ebb tide, they are seen singly amidst coral reef and mud-flats some distance away from the sea. In fact, puddles left behind when the tide recedes are their favourite haunts at the seaside. They seem to play hide and seek amidst rocks and pools, chasing away other birds of their kind.

TURNSTONE

Gujerati Name—Kāchabarāṅgi

Arenaria interpres LINNAEUS

See Coloured Plate 7.

SIZE. Between the Partridge and the Quail.

IDENTIFICATION. Head, mixed with brownish-black and white, especially near the forehead and the eyes; upper-parts, reddish-brown to khaki, the pale-edged feathers giving it a tortoise-shell appearance; side of face and neck, black, often black and white; upper-breast, black; remainder of lower plumage, white. The straight and stout black bill and the orange legs are its distinguishing characteristics, and so also is its black chest which is often retained during Winter. Another identification in the field is its comparatively longish body with short legs. In flight, the black and white pattern of the upper-parts and the black bar on the white tail are conspicuous; also, the oval white patch surrounded by black on the rump immediately identifies the bird.

NOTES. The bill is used for turning over stones. Normally, four to five birds are seen on the rocky and sandy mud-flats of our Peninsula. Although frequently seen on sandy shores, especially at high tide, the bird prefers reefs where there are green seaweeds and pebbles mixed with molluscs. The flight is rapid and the call uttered is a short *kit-it*. A few birds may be seen feeding independently or reluctantly mixing with other smaller Waders. I have never come upon very large flocks, but have always seen them in pairs or a few birds together, and rarely 20 to 40 birds at high tide. While resting, they may be seen mixed with other Waders.

DISTRIBUTION. Breeding in Europe and Western Asia and migrating south to Africa, India and Sumatra. The bird is a regular visitor to the Saurashtra sea coast and is seen in small numbers during the cold months.

FOOD. Small crabs, molluscs, limpets, mussels and shell fish. The birds have a habit of turning over small stones and looking under them in search of food. The incoming tide is the best time to watch them feeding. They are fairly active, though silent then, and quite on their own. They prefer the same feeding ground as the Oyster-Catcher.

PINTAIL SNIPE

Gujerati Name—*Salipāṇchh Gārkhod*

Gallinago stenura BONAPARTE

SIZE. Slightly larger than the Quail.

IDENTIFICATION. This bird closely resembles the Fantail Snipe and is not easily differentiated from it in the field. In hand, however, it is distinguished by its outer tail-feathers being very thin, almost hair-like in appearance. Another distinguishing feature is the feathers under the wing, called the axillaries, which are heavily barred; those of the Fantail Snipe are either white or faintly barred. On the average, the bill is shorter and has a ■ crochet-like tip. Mr. Humayun Abdulali mentioned to me a good method of distinguishing the bird in flight from the Fantail, and it is to note its more conspicuous white tips to the secondaries. However, this method is only effective in favourable sunlight. Sexes alike.

NOTES. The Pintail Snipe arrives about October and is seen together with the Fantail, but it is not so common. It leaves about April. It is a regular post-Monsoon and Winter migrant.

DISTRIBUTION. Breeding in North and Eastern Siberia and Tibet to Turkestan, and migrating regularly to India and throughout Saurashtra, Kutch and Gujerat.

FOOD. The same as the Fantail Snipe.

COMMON OR FANTAIL SNIPE

Gujerati Name—Gärkhod

Gallinago gallinago gallinago LINNAEUS

See Coloured Plate 15.

SIZE. Slightly larger than the Quail.

IDENTIFICATION. A dark brown bird with light fawn markings on the upper-parts, mixed with black. It has a long brownish-black bill and fairly long greenish legs and feet. The eyes are brown and comparatively large. The head is striped blackish, the breast is light brown, the tail is black with rusty-red tips and the rest of the under-parts are white. The chief distinguishing characteristics are a long straight bill, a conspicuous broad stripe from the base of the bill to the eyes and continued upto the nape, and another stripe below the eyes. A sudden and rather harsh *kheek-kheek*, given out as the bird flies up and followed by a swift zigzag flight as it rises well into the sky, identifies the bird from other Waders. Sexes alike.

NOTES. The Fantail Snipe arrives in October or earlier and remains with us throughout the Winter and Spring months, leaving in April. It is found in marshy places on the shores of lakes and ponds, the sea coast and the banks of rivers; even the smallest of puddles will harbour them if there are plenty of green rushes and reeds. A shallow jheel is a favourite location. It is partial to any swampy and muddy area, and is frequently seen in gutters close to cities, flooded fields and water courses. It is also found in grass next to water, but rarely in a dry field or forest. The Snipe often form into small wisps or are found singly, either probing their long bills into the mud for food or squatting on some isolated patch of mud. They are fast fliers, and suddenly rise from the ground when disturbed. The bird allows good observation while feeding on the muddy edges of lakes and ponds where the water has receded. It has an excellent colouration for camouflage which makes it extremely difficult to spot. The best time, therefore, to observe it is the early morning and late evening when it comes out into the open. As it is a shy bird, one can only see it in the above circumstances. However, it gets used to local traffic near a road or village, where it can be seen constantly at rest or feeding. It has a habit of 'freezing' as soon as danger threatens. To the sportsman, it affords excellent sport and a flying Snipe is a real test for marksmanship. It is also considered good eating, though opinions differ in this matter. In some places, these birds are shot in large numbers. During the hot hours, they rise reluctantly and may be passed by unnoticed in a beat. However, if the beaters are really close, shooting Snipe in the afternoon becomes easier as the birds do not rise from a distance or with the same energy as in the morning. 8 to 10 birds, forming a wisp, are generally encountered during the early

morning feeding hours and a bag of 10 couple is a good one for a gun in any place in Saurashtra. Shallow jheels, with plenty of green rushes and aquatic plants mixed with mud, always contain some Snipe during the Winter months.

DISTRIBUTION. Breeding in Europe and Siberia to Kashmir, and migrating southwards to India including Saurashtra, Kutch and Gujerat. The bird is common all over the country.

FOOD. Worms, grubs, molluscs, caterpillars and larvae of insects. It is seen feeding in wet ground, probing its long bill into the mud. It frequents rice fields and, sometimes, those of wheat and dry reedy patches in search of food.

JACK SNIPE

Gujerati Name—Nānō Gārkhod

Gallinago minima BRUNNICH

SIZE. About that of the Quail.

IDENTIFICATION. The Jack Snipe resembles the Fantail Snipe in colour but differs in being much smaller and in having a shorter and stouter bill. The tail-feathers are pointed and do not have that rusty-red colour which is found in the last two species. In the field, it is recognised by its habit of rising silently. Also, it does not fly far before resettling. In flight, it is not as fast as the Fantail nor does it show the same smartness when rising. Bill, blackish; eyes, brown; legs, olive-green. Sexes alike.

NOTES. The Jack Snipe is found in the same type of ground as the last two species, preferring marshy places with, perhaps, more cover. These birds are usually flushed singly but I have sometimes seen a wisp of them; normally, they are not abundant and only a few are found with their larger brethren. The best way to see them is to walk in a line with a few people in wet mud full of tall and short reeds, and, then, to beat the dried reed beds once again if none are found. These birds will not usually rise until almost under your feet. It is quite possible to flush some Fantail Snipe, too, and the student can, then, tell the difference between the larger species and the Jack Snipe quite easily. Mid-day is not a good time for a beat as the birds lie low and often will not rise, even when one passes a few inches from them. Sportsmen who shoot Snipe find this species easier to bag on account of its slower and straighter flight. I have always felt it hardly worth shooting.

DISTRIBUTION. Northern Europe and Asia, and migrating south to Africa, the whole of the Mediterranean belt and Persia to India including Saurashtra, Kutch and Gujerat. It is fairly common in Winter.

FOOD. Same as in other Snipe.

SANDERLING

Gujerati Name—Dariāi Lagōṭhō

Calidris albus PALLAS

See Coloured Plate 17.

SIZE. About that of the Grey Quail.

IDENTIFICATION. A small whitish Shore Bird in Winter plumage in which it is mostly seen. Upper-parts, mixed grey and white with the head and lower portion almost pure white; crown, greyish-white; legs and bill, black, the latter short and straight. The ash-grey Winter plumage is transformed to chestnut-brown in Summer, the breast assuming the same colour but lighter contrasting with the white lower-parts. The Sanderling is easily identified in hand by the absence of a hind-toe. In Summer plumage, it resembles the Little Stint closely though much larger in size. In flight, the white wing-bar is clearly seen. Although slightly larger in size, the bird resembles the Dunlin in Winter, and has faster movements on the ground. Sexes alike.

NOTES. The Sanderling is fairly common on the sea coast, but less so than the Little Stint, the Dunlin and other common Waders. In Winter plumage, it is a conspicuous little bird and can be identified easily from a distance in spite of its small size. It is found in pairs or small groups on the seashore where it allows fairly close approach.

DISTRIBUTION. Breeding in the Northern Hemisphere from Europe to Siberia and close to the Arctic Circle, and migrating south to the Equator. Fairly common Winter migrant to the coasts of India and Saurashtra.

FOOD. Molluscs, worms, bivalves such as whelks, etc., and their eggs. It generally feeds in small groups and is fairly active while feeding, much more so than the Dunlin. It is a typical Marine Bird.

LITTLE STINT

Gujerati Name—Kichadiyō

Calidris minutus LEISLER

See Coloured Plate 17.

SIZE. Smaller than the Quail.

IDENTIFICATION. This is one of our smallest Shore Birds. In Summer, the head is streaked on the crown with rufous-brown. Upper-parts, brown, mixed with cinnamon and having a somewhat mottled appearance; wings, blackish; back and rump, black; outer tail-feathers, greyish-brown; rest of the lower-parts including the chin, white; breast, rufous-brown and streaked or spotted with black. The birds changing from Summer to Winter plumage have a greyish-brown to khaki-brown appearance. The Winter plumage is always much more greyish-brown with the breast almost white, the crown black and a wing-bar visible. Legs and bill, black; the latter straight and short. The bird is separated from the Temminck's Stint by its much more mottled upper-parts and crown.

NOTES. During Winter the Little Stint is abundant on the seashore but less so on inland waters. It is one of our commonest little Waders, and is often seen in large flocks on the seashore but in small numbers on lakes and streams. As it flies, it emits a short call, *chit-chit*, and also a sharp trilling one, *trü-trü* or *trueet*. On the shore, the birds fly low in an elongated pattern. In the afternoon they gather for their mid-day rest.

DISTRIBUTION. Breeding in Northern Europe and Siberia and migrating south to India, including Saurashtra, Kutch and Gujerat, and as far as Ceylon.

FOOD. Small marine and freshwater animals. While feeding, they are active birds, often emitting a high-pitched twittering sound. On the sea coast, they are usually seen in large groups. Solitary birds or small batches may feed separately on mud-flats, creeks, mouths of rivers and lakes. Feeding flights are observed from the water's edge to various spots on the beach. As is the case with other Shore Birds, the ebb and tide play an important part in the feeding movements of Little Stints.

TEMMINCK'S STINT

Gujerati Name—Temminck-nō Kichadiyō

Calidris temmincki LEISLER

See Coloured Plate 17.

SIZE. Same as the Little Stint.

IDENTIFICATION. The upper-parts are uniform brown with pale edges to the feathers; in Winter, they are more greyish-brown; the forehead is white

and a small white supercilium is present. In flight, a white and brown wing-bar can be seen. The legs are greenish-black or yellowish and the bill is black. The lower-parts are white. The breast is greyish-brown or khaki-brown in contrast to the white breast of the Little Stint. The central tail-feathers are brown. The bird is distinguished from the Little Stint by its white outer tail-feathers, seen best when rising or alighting. It prefers freshwater marshes, lakes and streams instead of the seashore; this is another characteristic of this species, but complete reliance on this cannot be placed. Sexes alike.

NOTES. When flushed, this bird has a quick wing-beat with intermittent glides in between; hence the flight is more like a Sandpiper's. It is not shy and allows fairly close approach. When some danger threatens, it camouflages exceedingly well with a muddy background by turning itself away from the danger, and it is, then, almost impossible to notice the bird unless some movement betrays it. It looks as if Temminck's Stints are aware of their concealing colouration. When disturbed, they rise almost vertically with a shrill *krick-krick*, unlike the *tit-tit* of the Little Stint. I have never seen them in as large a flock as Little Stints, and on lakes 8 to 10 birds in a group, or fewer, is the normal number encountered.

DISTRIBUTION. Breeding in Northern Europe and Siberia, and migrating south to Africa and India. Fairly common migrant in Saurashtra, Kutch and Gujerat.

FOOD. While taking food, which consists of insects, crustaceans and seeds, the bird walks rapidly on the water's edge. Generally seen on jheels.

DUNLIN

Gujerati Name—Kālōpēt Kichāḍiyō

Calidris alpinus alpinus LINNAEUS

See Coloured Plate 17.

SIZE. Smaller than the Snipe.

IDENTIFICATION. In Summer plumage, this small Wader has a black patch on the lower-breast which is sometimes retained to a certain extent during Winter. This patch and its slightly decurved black bill which is sometimes straight easily distinguish the Dunlin from all other Shore Birds. Moreover, it is of a larger size than the Little Stint to which it bears some resemblance. The call is a guttural croak. Its general appearance is that of a mouse-brown bird streaked with brown on the breast and having white lower-parts. A faint white supercilium is present and there is a white wing-bar which is visible in flight but is not as conspicuous as in the Sanderling. The bill, legs and eyes are black. Sexes alike.

NOTES. Dunlins are seen in flocks, some of which are very large. While feeding, they are always on the move. They are not shy but take wing suddenly when disturbed. Although sometimes seen on lakes, they are commoner on the sea coast. They have a tendency to gather in large flocks, when they may be seen flying swiftly along the shore, turning suddenly and alighting on the sand or mud-flats to start feeding.

DISTRIBUTION. Breeding in Northern Europe and migrating south to India including Saurashtra, Kutch and Gujerat, arriving from September onwards. Common.

FOOD. Small marine animals. The birds prefer mud-flats and are fairly active while feeding. At this time, they utter a twittering call. The ebb and tide are the best times to watch them. They have a tendency to scatter while feeding, but generally group together when disturbed. Sudden flights from one portion of the beach to another are common occurrences on the seashore. Some of these flights, however, are caused by the approach of Falcons. The male Peregrine Falcon preys much upon this species.

CURLEW-SANDPIPER

Gujerati Name—Vāṅkichāṇch

Calidris testaceus PALLAS

See Coloured Plate 17.

SIZE. Slightly smaller than the Snipe.

IDENTIFICATION. Easily recognised from other small Shore Birds by its downward curved bill which is much like that of the Curlew but, of course, shorter and less curved; it can easily be confused with that of the Dunlin. Some birds, however, do not have the bill sufficiently curved. Like most Waders the Curlew-Sandpiper assumes a greyish-brown plumage in Winter, then, the whitish face and head appear almost streaked with brown; the tail is brown and the upper tail-coverts are white. The white rump patch and a conspicuous white wing-bar visible in flight distinguish it easily from the Dunlin. In Summer plumage, the bird is identified by its chestnut-brown plumage. The white supercilium is not very distinct and the fore-neck is mixed with grey. In hand, the white under tail-coverts show black spots and so do some of the upper tail-coverts. The bill and legs are black. The bird is also known as Curlew-Stint or Pygmy Sandpiper. Sexes alike.

NOTES. It is found on mud-flats and along the seashore. Usually, it is a solitary bird, preferring creeks and backwaters, but it sometimes mixes with other Shore Birds. On migration, however, Curlew-Sandpipers are seen in

flocks, sometimes fairly large. I have seen such flocks in July. The birds are fast on the wing, turning sharply in the air.

DISTRIBUTION. Breeding in the Arctic Circle and colder regions in the Northern Hemisphere, and wintering south to Africa and S.E. Asia. Not uncommon in India but not often met with in Saurashtra except on the sea coast where it is a regular migrant. Found in Kutch and Gujerat.

FOOD. Crustaceans, molluscs, insects and marine life. Most birds feed on mud-flats close to mouths of rivers.

BROAD-BILLED SANDPIPER

Gujerati Name—Safédnéṇa Kichāḍiyō

Limicola falcinellus PONTOPPIDAN

SIZE. Between the Little Stint and the Dunlin.

IDENTIFICATION. This bird closely resembles the Little Stint in size but is a shade larger. The longish decurved bill is not always apparent in the field and this feature is somewhat variable as in the Dunlin. Nevertheless, the white supercilium and the dark eye-streak should help in identifying the bird. Moreover, the Jack Snipe-like appearance of the bird, especially its head, bill and upper-parts are diagnostic of the species. In Winter plumage, the upper-parts are ash-brown, somewhat resembling those of the Dunlin, and the lower-parts are white with streaks on the breast. In Summer plumage, the Jack Snipe-like upper-parts are more pronounced, a characteristic which immediately distinguishes this Stint-like Sandpiper from other Shore Birds. However, the broad black bill and the short legs are deceiving features in the field. Sexes alike.

NOTES. These birds are likely to be easily overlooked on the seashore amongst numerous small Shore Birds. Although they do mix with other Shore Birds, I have noticed that even while thus mixing, they form their own cliques. Some flocks are fairly large, others very small.

DISTRIBUTION. Siberia to Japan and south to India, Burma, and Australia. The coastline of Western India, including Saurashtra and possibly Kutch, in Winter.

FOOD. Marine life. While feeding, the bird is found on sandy beaches and mud-flats and probes its bill like a Snipe. It is not such an active feeder as the Little Stint.

RUFF

Gujerati Name—Tiliyō

Philomachus pugnax LINNAEUS

See Coloured Plate 17.

SIZE. Male: about that of the Partridge. Female: considerably smaller.

IDENTIFICATION. I know of no other Wader which varies in colour as much as the Ruff. Generally, the upper-parts give it a strikingly mottled appearance. The lower-parts from the breast vary from pale buff to white while the wings are brownish-black. In Summer plumage, or breeding dress, the males assume a long ruff or frill-like collar of feathers which can be erected. However, practically every bird is slightly different to the rest in one way or another. All the same, the upper-parts are usually mottled khaki-black and the breast is reddish-brown to brownish-black. In Winter, when these birds are commonly seen with us, they have more of a uniform greyish-brown dress and have lost the long feathers of the neck. Many, however, retain their mottled appearance; the cheeks, the forehead and the lower-parts are white. Some males have entirely white head. The most distinguishing feature in all types of plumages appears to be the two oval white patches on each side of the central area of the tail which are conspicuous as the bird rises; the tail itself is brown with white tips. The bill is rather short and straight, and brown to blackish, sometimes with an orange base in males which is conspicuous at the time of their return migration in April. The legs vary considerably between dull orange, greenish, fleshy and brownish-black. The female, or the Reeve, is smaller and has no frill collar, and in Winter dress, she is uniform grey-brown above and whitish below. Young birds have a distinct black and buff pattern on the back. The student should be careful not to mistake the Ruff for the Redshank. The broad white wing-band of the latter is conspicuous.

NOTES. The Ruff arrives just after the rains and is abundant during Winter. It is seen in large flocks and easily distinguished by its common occurrence inland and by the white, shining feathers of the under-wing and lower body giving it a silvery appearance when seen in flight. The sudden turnings of Ruffs, as the flock wheels in the air, disclose their identity from a distance. A flash of white and brown over the fields is a sure sign of these birds. They are rapid fliers and one can hear their wings making a swishing noise as they pass overhead during the early morning or late evening. They are seen flying fairly low in almost a bow-shaped formation as they swiftly pass to their feeding grounds or return to their roosts at sunset. These evening flights are a grand spectacle, and one is entranced with their low diving, followed by rising up at amazing speed. I have watched flight after flight keeping to the same course and direction day after day with clockwise precision. I have timed

them almost to the minute each day at dusk: such is the regularity of their evening flights. Although found on the sea coast, Ruffs go well inland, and just after the harvest they collect in large numbers to feed in the open fields and at 'khalavāds'. On the slightest disturbance, the whole flock rises and circles but if no real danger is suspected, it resettles as suddenly as it had risen. I have seen this taking place repeatedly. The Ruff is a favourite food of migratory Falcons, but only the fastest can catch it on the wing. It may be seen on the seashore, marshes and lakes, mixing with other Waders. It is a very active and alert bird, taking wing at the slightest suspicion.

DISTRIBUTION. Breeding in Europe and Northern Asia, and migrating to Africa, India and Ceylon. In Saurashtra, it is common throughout the Winter months, arriving about October or even earlier and leaving in March. It is rarely met with in June and July.

FOOD. During Winter, the birds feed on grain but insects, too, are readily eaten. While feeding on land, their movements are quick and a flock can be seen to move fairly rapidly. They also eat small marine animals and, before the crops are harvested, many are seen on the seashore. They may be seen swiftly wheeling or suddenly changing their course over their feeding grounds, rising and resettling abruptly. They often raise their mantles while feeding. After feeding at dusk, they invariably fly to the waterside, be it creek or lake, to roost.

For details, etc.

BLACK-WINGED STILT

Gujerati Name—Gāj-Pāon

Himantopus himantopus himantopus LINNAEUS

See Coloured Plate 15.

SIZE. About that of the Partridge.

IDENTIFICATION. A black and white Wader, possessing long legs for its size and a fairly long and pointed straight bill. The whole body is white but the wings are entirely black in the male and slightly brownish in some females. In Winter, the upper-head and nape assume a wash of brown. The legs are red to pinkish-red. The bill is black and the eyes are dark red. In the breeding season, the head of the male is, on the average, slightly whiter and that of the female is slightly more brownish or grey on the crown and nape.

NOTES. A very common and familiar bird which is seen everywhere near water. One finds it wading in village pools, shallow streams and marshy ground. During the cold months, the birds flock together and are then seen

more frequently in groups of 40 to 50. Their long legs enable them to wade in water in search of food. The flight is slow and the wings are well-cut though not very long. The Stilt has a harsh call, a *klank*, which is uttered repeatedly. It is not shy and permits close approach.

DISTRIBUTION. Europe, Africa and India to Malaya. Resident and local migrant in Saurashtra, Kutch and Gujerat.

NESTING. Season—April to August. Stilts prefer marshy ground to breed in. However, there is no rule about this except that they nest close to water. At Port Albert Victor (Bhavnagar), I found them breeding in small groups on salty but marshy ground in a kind of grass. But the birds found breeding on shores of lakes usually nest in separate pairs a good distance away from each other, whereas at the salt pans in Porbandar I found them breeding in colony. The eggs number three to five, exceptionally six. They resemble those of the common Red-wattled Lapwing from which they are difficult to distinguish. However, on an average, they have a more greenish-brown tinge and are larger. Birds nesting in marshes make their nests with dry or wet reeds squashed and bent. Some nests I found on lakes had no nesting material, being mere depressions in the sand. I have also seen a few nests with gravel foundation, like those of the Red-wattled Lapwing. After incubation commences, the eggs become dirtied with mud and water. During the hot hours, the parents dip their lower-parts in water in order to moisten the eggs. Both sexes incubate and are very noisy during the breeding season, flying over one's head and emitting harsh calls, viz., *teoo*, *tee*, *tee*. They sham injury by fluttering their wings and walking as if crippled, thus making every endeavour to distract one's attention from the nest. When feigning injury, a *krrrr* is uttered, reminiscent of the call of a Parakeet when captured. However, the eggs are not difficult to find as not only that the birds themselves are conspicuous but they betray the nest by calling continuously, though, as a rule, they slip off the nest from a distance. No sooner has the danger passed, then they return to their nests. One unusual nest site I found was only a foot away from a beaten track which was regularly used by labourers and yet the birds did not forsake the nest.

FOOD. Insects, larvae, small fish, prawns and other aquatic life. Their method of feeding is interesting. In shallow water, the bill is swished from side to side in Avocet fashion. In slightly deeper water, they duck their heads while feeding, bobbing up and down or picking up food from the surface. In still deeper water, they wade up to their body, dipping their heads under the surface like Waterfowl. During Winter, one may see small flocks resting together in shallow water after feeding, with one leg lifted up and the head resting on the back.

AVOCET

Gujerati Name—Ūṭi-Chāṇch

Recurvirostra avosetta LINNAEUS

See Coloured Plate 17.

SIZE. Slightly larger than the Partridge.

IDENTIFICATION. The Avocet is a black and white bird. The upper-head to the nape is black with the upper-parts alternately black and white, the rest of the body being white. The sharply pointed black bill is upturned which immediately identifies it. The grey legs also separate it easily from the Stilt. The eyes are black. Sexes alike.

NOTES. In Winter, Avocets migrate to Saurashtra and are seen in small numbers, usually in pairs, on village ponds, lakes, rivers, and the seashore. But they prefer pools of shallow water where there is plenty of food. They are not shy and will allow fairly close approach. They arrive soon after the Monsoon and I have seen them at Porbandar as late as May. A few pairs were seen at Bhavnagar in July. The 1951 Winter brought many birds to Saurashtra.

DISTRIBUTION. Breeding in Europe, Central Asia and Baluchistan, and quite recently found breeding in the Rann of Kutch by Mr. Sálím Ali. The bird is a Winter migrant in other parts of India. A regular migrant in Saurashtra and Gujerat. Not uncommon during Winter.

NESTING. Season—April to June. The birds nest in colony on caked mud-flats.

FOOD. Aquatic insects and their larvae, crustaceans, molluscs, etc. They feed by wading in water, their long legs being well-adapted for this purpose. The upturned bill ploughs the water in search of food and also sweeps from side to side with a slashing movement.

PAINTED SNIPE

Gujerati Name—Pān Lauvā

Rostratula benghalensis benghalensis LINNAEUS

See Coloured Plate 15.

SIZE. Slightly larger than the Grey Quail.

IDENTIFICATION. This is a Wader in which, like the Bustard-Quail and Button-Quail, the female is brighter coloured and the male takes care of the eggs and young. The female is a rich chestnut-red from head to breast. She has a long bill which is slightly curved. The eyes are large and made more

conspicuous by a white ring round them. The lower-breast and under-parts are white; the white girdle on the deep chestnut-red breast and the broad white ring surrounding the eye distinguish the bird fairly easily. The upper-parts are dark-green or bronze-green and the wing, which is greyish, has yellow round markings. The male differs in being less brightly coloured, his breast and head being greenish-grey and the upper-parts darker green; the markings on the back have bars. Also, he is slightly smaller in size. In both sexes, the legs are long and greenish.

NOTES. In habits, the bird is solitary and seldom seen because on sensing danger it immediately crouches. When they become used to cattle, herdsmen and passing traffic, however, many birds do not show such fear and they are then seen at the water's edge walking slowly in a skulking manner, and squatting from time to time. When in full view, they appear much larger in size. They are seen in wet green patches and small rain-water pools, and also along lakes where there is mud, aquatic plants and grass. They are prone to local movements and are really birds of the Monsoon. They are at their best when they arrive on large lakes just before the Monsoon. They emit a piping note, something like a low whistle which is seldom heard, *i.e.*, the sound made by blowing into a bottle. During and after the rains, the birds are found in marshy places. They prefer that kind of grass which grows in shallow water with many small islets or mud patches in between. During Winter, they take cover in long rushes, and can only be seen when one is beating or walking up for Snipe. They rise reluctantly and their flight is not fast. They do not go far but settle a short distance away. On the whole, the Painted Snipe, which is really a kind of Rail, is shy and silent, and tries to remain unobserved as much as possible by crouching. Once the bird sits, it is impossible to see it even from a few feet. During courtship, I once watched a female stretch her wings above her body in front of the male.

DISTRIBUTION. Most of India including Kutch, Gujerat and the whole of Saurashtra. Resident and local migrant.

NESTING. Season—June to October. The female, as mentioned above, assumes the role of the male in most ways, challenging rival females by calling and attracting as many males as she can. On account of this she is capable of laying a number of clutches one after the other. Four eggs form the normal clutch; they are yellowish-clay or dark khaki, blotched and sometimes mixed with lines of black. The blotching is heavy and profuse. The nest consists of just a few water-plants put together on some mud. Some natural out-croppings of mud above the water, where there is grass or rushes, or what might be called a shallow jheel, is an ideal environment for nesting. However, the nest is very difficult to find, and the male sits so close that unless one almost steps on him, he will not move. Nests are found accidentally when out Snipe-shooting.

Small patches of water, overgrown with short grass or plants and having small islands of mud, are the most likely places for nests. Rain-water puddles and small rain-water ponds, as well as the shores of lakes, are the places where I have found most nests. The sites chosen vary, and a wide selection is available during a good Monsoon, so that it is difficult to say where the birds will nest. The nest is at times so near to the water and the site is on such a wet patch of mud that the eggs often become muddy. The eggs are comparatively large for the size of the bird and the markings on them form a perfect disruptive pattern. When the birds are seen in pairs, it is a good opportunity to watch them carefully with a view to finding their nests. On large lakes, they are seen almost throughout the year, and odd nests may be found in the months of March and April. However, the majority of the birds breed after the rains break.

FOOD. They feed by probing their bills into mud in search of worms, etc. Their movements are slow and deliberate. They feed close to water on water-snails, green aquatic plants and insects. They can best be seen very early in the morning or late in the evening, and during the Monsoon at any time of the day.



CREAM-COLOURED COURSER

Gujerati Name—Rétāl Rāṇa Godhalō

Cursorius cursor cursor LATHAM

See Coloured Plate 8.

SIZE. About that of the Partridge.

IDENTIFICATION. Much like the Indian Courser, but much paler and having a light buffy-cream colour with white under-parts. The eyes are dark brown with a white superciliary stripe from the eyes to the nape below which there is a black eye-stripe. There is also some grey on the head. The legs are whitish, and the birds have a very erect pose. The wings are black and rounded; the bird can soar into the sky with ease. The lighter colour of the under-parts differentiates it at once from the commoner species. Young birds do not have a black stripe behind the eyes and are more or less speckled on the upper-parts.

NOTES. In Saurashtra the birds are seen mostly during Winter, preferring large stretches of semi-desert country, open cultivation, and the seaside. They are quick runners, but take wing at the slightest disturbance.

DISTRIBUTION. Breeding in North Africa and Arabia, and migrating from Persia, Afghanistan and North West India to Kutch, Gujerat and Saurashtra. This Courser is an uncommon but regular Winter visitor to most parts of arid Saurashtra; it is more often seen in North Saurashtra in the Winter months, being less common in other parts.

FOOD. Insects and grain.

INDIAN COURSER

Gujerati Name—Rāṇa Godhalō

Cursorius coromandelicus GMELIN

See Coloured Plate 7.

SIZE. About that of the Partridge.

IDENTIFICATION. A long-legged bird with the upper-parts brown and the breast and sides chestnut, becoming blackish on the lower-breast; the abdomen is white. Bill and eyes, black; a black eye-stripe passing towards the nape; a conspicuous white stripe or supercilium present; both these stripes form a kind of pointed tuft at the nape. Legs and tail-tips, white; the latter is short and inconspicuous. The upper tail-coverts appear as a white patch which is noticeable in flight. The wings are black and rounded. Sexes alike.

NOTES. Ploughed fields or barren waste land is the main habitat of this bird. The Courser is a silent bird and is found in pairs or flocks of 10 to 200. It is a fast and quick runner and behaves much like a Plover, running for a short distance and then lowering its head down as if to pick up something. It feeds in this manner, also. Being shy, these birds resent close approach and take wing immediately. The flight is a quick flap which takes them into the sky easily and rapidly. When landing, they glide with half-closed wings. They have a very erect stance, always retaining a well-balanced head-carriage while running. They are fairly common in barren open ground, ploughed fields and semi-desert country. On account of their powers of mounting and turning rapidly in the air, they are seldom, if at all, killed by Falcons.

DISTRIBUTION. Common throughout India including Kutch, Gujerat and Saurashtra. Resident.

NESTING. Season—January to July, mostly between March and June. There is also a second season commencing from October. No nest is built and the eggs are merely placed on the ground which they match perfectly. Two eggs are laid which are heavily blotched with dark brown on a yellowish-stone or darker ground. Ploughed fields or waste land is the favourite site, and the parent

birds camouflage with this type of soil perfectly. The parent bird leaves the nest without revealing the slightest clue to its site, and settles on it in the same manner. Even during the nesting season, these birds are exceptionally silent. Some eggs I found were amidst dung in barren country. They harmonise with the background extremely well and hence they are difficult to find. While standing or walking, the young in down assume an erect pose, puffing out their chests like adult birds. Young birds of the season are pale and speckled on the upper-parts and do not have the rich colours of the adult.

FOOD. Insects and grain. Patches of dried dung are favourite feeding places. I have often seen them in company with flocks of sheep and goats.

PRATINCOLE

Gujerati Name—Téjpar

Glareola pratincola LINNAEUS

See Coloured Plate 16.

SIZE. About that of the Myna. Indira Gandhi Centre for Wildlife

IDENTIFICATION. In appearance, much like a Swift, having a short bill, a forked tail and long pointed wings. However, the slow wing-beats and the gliding flights distinguish it easily. To me its flight recalls a Tern rather than a Swift. The short, slightly curved bill has red basal portion. Throat and upper-breast, buffy-yellow edged with a white and black line. Upper-parts, brown; tail, black; rump patch, white; under tail-coverts, white; abdomen, pale. The first primary shaft is white but the second is less so. Measurements: Wing, 173-191 mm.; outermost tail-feathers, 71-85 mm.; central tail-feathers, 52-62 mm. Sexes alike.

NOTES. These chocolate-brown birds often follow the course of a river and feed as they fly along, manoeuvring with ease from side to side and over the water's edge. One may occasionally come across a single bird, but normally they are seen in flocks; they are rarely seen on the ground and are shy and not easily approachable. I have seen flocks of these birds moving south-west and westwards at Bhavnagar and Porbandar. Also, I have observed them in July and August, and as early as April. Most of them appear before and just after the rains. They are known to breed on the ground in sandy river-beds and on shores. One specimen collected in August from Fulsar, near Talaja, was a young dark-brown bird which had pale edges to its feathers and a light reddish-rump patch. It was collected from a flock of approximately 200 birds.

The birds are capable of accelerating their speed at which time they look like Plovers. I have seen them being chased by Red-headed-Merlins.

DISTRIBUTION. Throughout the East upto Australia. The Pratincole is rarely seen in Saurashtra, and I have never found it breeding.

FOOD. Insects taken on the wing. The flight is fast and the birds often fly quite high, swooping down over water. I have rarely seen them settle.

GREAT BLACK-HEADED GULL

Gujerati Name—Motō Kālā Māthānō Dhōmdō

Larus ichthyaetus PALLAS

See Coloured Plate 18.

SIZE. Larger than the Pariah Kite.

IDENTIFICATION. In breeding plumage, the head is blackish-brown, the lower-parts are white and the upper-parts are grey. Bill, yellow with black sub-apical band; gape and tip, crimson. Legs and feet, yellow to orange. Eyes, brown; eyelids, red; a white spot below and above the eyes. Tail, white in adults, but with a black subterminal band in immature birds. In flight the wings display a whitish leading edge much like that of the Brown-headed Gull and the wing-tips are black often with a white spot at the end. In non-breeding plumage, the head is blackish-brown often mixed with white, or it is white with brown streaks. Bill, dull green with black apical band and orange tip. There are some blackish spots near the eyes. Upper-parts, pure grey; lower-parts, greyish-white. Eyes, brown. Primary coverts, white; secondaries, silver-grey and black. Primary, white; outer-web, black. Legs, yellow to greyish-yellow. Total length, about 24-26 inches; wings, over 450 mm. It is distinguished from other Gulls by its larger size and solitary habits, although in March a good number of Great Black-headed Gulls may be seen together in salt pans and harbours. Immature birds have black first primary with a white spot near the end, and a black band on the tail and are mottled all over; the head is not black. Sexes alike.

NOTES. This is the largest and most impressive Gull of our coastline, coming to our shores and river mouths as a post-Monsoon and Winter migrant. The flight is graceful, and the birds may be seen at full tide as they follow the coastline. The call is a loud harsh cry: *hank* or *haa*. The bird is usually seen solitary and flying low. It seems to assume its full plumage much earlier than the other Gulls. I have seen many birds in full plumage in March and April and a few at the end of February.

DISTRIBUTION. Breeding in Central and Northern Asia, and wintering southwards. In India, it is a regular Winter migrant; less common in Saurashtra.

FOOD. Fish and marine life; also waste matter. I have seen these birds robbing smaller Gulls of their prey.

BLACK-HEADED GULL

Gujerati Name—Kālā Māthānō Dhōmḍō

Larus ridibundus LINNAEUS

See Coloured Plate 18.

SIZE. Somewhat larger than the House Crow.

IDENTIFICATION. Much smaller than the Great Black-headed Gull and slightly smaller than the Brown-headed Gull. In full plumage, it is distinguished by the blackish mask covering most of its head. The mask is really a chocolate-brown one, but in Winter the birds lose this colour and only a spot or crescent-shaped black mark remains near the eyes. The white primaries are tipped with black. The first primary, which is edged black, is a distinguishing feature of this Gull. In flight, the broad white margin to the black wing-tips, coupled with the absence of terminal white spots, should be noticed as a distinguishing characteristic at all stages. Some birds have a dark brown margin to the wings. The legs and feet are blood-red. As in Ducks, the feet are webbed to aid in its swimming; this is characteristic of all Gulls. The mantle and upper-parts are grey. Young birds have a black subterminal band to the tail. Sexes alike.

NOTES. These Gulls are found on the sea coast, sometimes entering freshwater tanks. It is quite possible to see them together in flocks for a few days but on account of their migratory habits, they may not be seen together for long. Owing to this, the bird cannot be considered a common migrant but only a passing one.

It is found in cleaner waters than the Brown-headed Gulls.

DISTRIBUTION. All over the Indian coastline. Uncommon but regular Winter migrant in Kutch and Saurashtra. Breeding in Europe, and the West and Central Asia.

FOOD. Fish, insects and waste matter.

BROWN-HEADED GULL

Gujerati Name—Dhōmdō

Larus brunnicephalus JERDON

See Coloured Plate 18.

SIZE. Between the Crow and the Kite.

IDENTIFICATION. This is our commonest Sea-Gull, almost the size of the Herring Gull, the colours being similar to the last bird. Legs, bill and eyelids, red. In flight it is distinguished from the last bird by its larger size and by the presence of a patch of white or "mirrors" on the conspicuous black primaries of the wing-tip. The leading edge of upper-wings appears white. In Winter, the head is grey or whitish, losing the brown or chocolate-brown colour of the breeding plumage which is assumed rather late in the year. The birds seen from April are in full plumage. Young birds have a black band on the tail-feathers; no "mirrors." These Gulls are commonly found in harbours, creeks, mud-flats and elsewhere on the seashore, either singly or in small groups.

NOTES. During Winter this Gull is seen on our coast and occasionally on large freshwater tanks. It is not a shy bird. The flight is powerful. A number of times have I seen it flying with ease against a very strong wind. Ports, creeks, salt pans, bays and lagoons are places to look for it, more often at high tide. The call is a harsh *kraaa*, reminiscent of that of a Rook or Crow.

DISTRIBUTION. The coastline of India including those of Saurashtra, Kutch and Gujarat. Common Winter visitor. Breeding in Turkestan and Central Asia to Tibet.

FOOD. Fish, mud-gobies, crabs, insects and rubbish. The birds swoop down to water to pick up a dainty morsel off the surface, or take it up while on the wing. They swim quite high, often alighting on water while feeding. Like most of the Gulls, they frequently follow a ship to feed on the waste left in its wake.

SLENDER-BILLED GULL

Gujerati Name—Gūlābi Dhōmdō

Larus genei BREME

See Coloured Plate 18.

SIZE. About that of the House Crow.

IDENTIFICATION. This Gull much resembles a Tern, and is identified by its rosy-white lower plumage and dove-grey upper-parts. The first primary is white with a black outer-web including the tip. The second primary is white

with a broad black tip and a black-edged inner-web. Eyes, pale yellow; bill, pale pink, tipped brown; tail has a brown subterminal band; legs, fleshy-pink. One specimen collected on the salt pans at Bhavnagar on 5th December, 1948, measured as follows: wing, 310 mm.; culmen, 43 mm.; tarsus, 50 mm.; tail, 115 mm.

NOTES. Some birds I saw on the Eastern Saurashtra coastline were not shy and settled on the water fairly frequently. In flight, the Slender-billed Gull gives one the impression of a Tern rather than that of a Gull. Terns, however usually have sharply pointed wings and comparatively short legs.

DISTRIBUTION. Breeding from the Mediterranean to the Mekran coast, migrating southwards during Winter, and found on the Indian coastline. Rare on the Saurashtra sea coast.

FOOD. Fish. Seen visiting salt pans for feeding.

EASTERN BLACK-BACKED GULL

Gujerati Name—*Kāḷipeethvālō Dhōmdō*

Larus argentatus heuglini BREE

SIZE. Slightly smaller than the Pariah Kite.

IDENTIFICATION. A very large greyish-white Sea Bird with long slim wings and a shortish tail. The head and back in an immature bird are brownish, giving it a very drab and mottled appearance. The adult bird has a dark slate-grey, almost black, mantle. The first few primaries are black. The bill is yellow with a red patch near the tip of the lower-mandible. The legs are yellow to orange-yellow. The flight is very graceful and much like that of the Kite, the bird gliding with ease and flapping slowly at times.

NOTES. This is a magnificent Sea-Gull and during Winter it is seen on the seashore, mostly flying at high tide. It keeps to the cleaner waters and is less common than the Brown-headed Gull. When tired, it alights on the sea with buoyancy but not for very long, resuming its flight in search of food.

DISTRIBUTION. The coastline of India including the entire coast of Saurashtra during Winter; not seen inland. Breeding in Russia and Siberia, and wintering south of that area.

FOOD. Fish and other live food from the sea. It also eats rubbish thrown away from ships, and because of the food thus available, it follows ships for miles out at sea, flying or gliding and dropping to the surface to pick up waste matter.

YELLOW-LEGGED HERRING GULL

Gujerati Name—Piḷā-pagvāḷō Dhōmḍō

Larus argentatus cachinnans PALLAS

See Coloured Plate 18.

SIZE. Same as the last.

IDENTIFICATION. In the adult birds, the mantle and scapulars are light grey with more white than in the last. It differs in habits from the Eastern Black-backed Gull, being found on inland lakes and rivers, also. The bill and legs are bright yellow, the former having an orange-red sub-apical patch on the lower-mandible. Younger birds, like those of the last species, are mixed with greyish-brown and are dull coloured. The plumage differs considerably at various stages from young to adult birds.

NOTES. I have seen these birds singly or in groups of four to five but never in large flocks.

DISTRIBUTION. Europe to India, wintering south of its breeding range which is from Southern Europe to North-West Asia. Regular Winter migrant to the western coast of India and Saurashtra, sometimes seen inland.

FOOD. Marine life, waste matter and insects.

INDIAN WHISKERED TERN

Gujerati Name—Thobhāḷi Dhōmḍi

Chlidonias hybrida indica STEPHENS

See Coloured Plate 18.

SIZE. About that of the Pigeon but considerably slimmer.

IDENTIFICATION. This little Tern is very much like the Black-bellied Tern and can easily be confused with it. In the breeding plumage, it has a velvety black cap with a conspicuous whitish patch on the cheeks. The upper-parts, including the wings, are ash-grey to light grey; the lower-parts are smoky-black. The bill and legs are dark red to black in Winter. The bird can be distinguished from the Black-bellied Tern by its dark red legs and ash-grey upper-parts, and also by its compact body, the shape being less torpedo-like. The tail is neither deeply forked nor pointed; it is almost square. In the cold months, the Whiskered Tern's dress changes to a light grey suit with a white abdomen; it loses the black cap, and the bill becomes dusky. Young birds have lighter greyish-white upper-parts.

NOTES. These birds are usually seen in small groups, flying not very high above the water and now and then emitting their peculiar croak-like sounds or *kreks*. Keeping their heads down to catch sight of some prey, they follow the edge of the water and then suddenly wheel back to follow up the same line. On seeing something, they swoop or dive to pick up their prey from the surface. They are very active fliers and, with slow graceful strokes of their pointed wings, float along easily, often turning in small circles while remaining in groups. During Winter, however, they are often seen singly or mixed with other species of Terns. The Whiskered Tern is not uncommon in Saurashtra, especially during the cold months, and I have regularly seen it in full plumage as a passing migrant. It is found on lakes, rivers and the seaside. The birds that I saw at Hathab Tank on 23rd June, 1947, were in full plumage, but they were not breeding.

DISTRIBUTION. Breeding in Kashmir and in many other parts of India. In Saurashtra, I have seen it only as a local migrant.

FOOD. Small fish, insects, larvae, and crustaceans. The birds do not fly very high while fishing. They constantly keep their heads down, much more so than the Black-bellied Tern.

WHITE-WINGED BLACK TERN

Gujerati Name—Safédpankhvāli Kāli Dhōmḍi

Chlidonias leucoptera TEMMINCK

SIZE. Same as the last.

IDENTIFICATION. As its name signifies, this Tern is black with a patch of white on the wing-coverts, but it is difficult to separate it from the last species during Winter; otherwise, the whole head, the lower-parts including the axillaries and the under-wing and the back are black. The bill and legs are red, but black in Winter.

NOTES. Recorded by the Yuveraj Saheb of Jasdan at Rajawadla Tank, Jasdan. I place it as a rare visitor to our coastline, but it may not be as rare as it might be presumed because it has been recorded inland.

DISTRIBUTION. Europe and the temperate parts of Asia, migrating southwards during the Winter months. Rare in Western India and Saurashtra.

FOOD. Marine life and insects.

GULL-BILLED TERN

Gujerati Name—Dhōmḍā-Dhōmḍi

Gelochelidon nilotica nilotica GMELIN

See Coloured Plate 18.

SIZE. About that of the House Crow.

IDENTIFICATION. This is a whitish-grey Tern with black bill, legs and eyes. In Winter, the head sometimes shows a few dark streaks, and there is generally a black spot just behind the eye. In the breeding season, the bird assumes a black cap, the upper-parts becoming greyer. The wings are slim and the tail slightly forked. This is the commonest Tern on our sea coast.

NOTES. These Terns are found many miles inland as well as on the coast. They fly together in flocks and swoop down on fish and insects. When hunting inland, they prey much upon insect life. They are very active, diving down and circling where food is abundant. In Winter, they are common and stay for a long period, almost the year round, but do not breed with us. They are noisy Terns, emitting harsh calls constantly while feeding.

DISTRIBUTION. Breeding in Kashmir and Ceylon, and along large rivers on the Mekran coast. Migrating into India, and a common migrant to Saurashtra, Kutch and Gujerat.

FOOD. Insects, molluscs, small fish, mud-gobies and small crabs. The bird is seen feeding frequently at ebb tide; unlike most Sea-Terns, it often settles on mud-flats to pick up food, and constantly emits a harsh call. It also feeds on the wing. Large flocks of white Terns settled on the shore usually prove to be of this species. While travelling over land, they swoop down to pick up insects. They appear to be most useful birds because I have seen them catching grasshoppers and locusts on agricultural land.

CASPIAN TERN

Gujerati Name—Dariāi Dhōmḍi

Hydroprogne caspia caspia PALLAS

See Coloured Plate 18.

SIZE. About that of the Kite.

IDENTIFICATION. This is our largest Tern. The cap and crest are black. The bill is coral-red and the legs are black. The upper-parts are silver-grey and the lower-parts are pure white. In many birds, the wing-tips appear blackish. In Winter, the black crown often appears streaked.

NOTES. This bird is one of the most graceful Sea Birds found on our shores. Its flight consists of steady and slow wing-beats which carry it buoyantly in the air. The wing-beats, however, increase while flying against a strong wind ; in spite of this, the bird makes headway fairly easily. The larger size of the bird makes it appear at times like a Gull, but its shape, especially the head and the long pointed wings, leave no doubt. It occurs singly on the coastline and at the mouths of rivers which it works up for some distance. However, at high tide it may be seen resting in a group. Rarely is it seen to enter large freshwater lakes a few miles inland. Always on the wing and in search of food, this Tern is very interesting to watch as it flies fairly high, poising at one spot to watch for some prey to rise and plunging with speed headlong into the water. If the quarry is missed, it rises from under the water like a Kingfisher and, then, with a shake of its feathers, removes the particles of water and resumes its fishing. Most of the Water Birds have their feathers well-oiled. This active and powerful Sea Bird resents intruders on its feeding grounds and will, with a harsh cry of *kek* which can be heard at some distance, drives away the newcomer. During the warm months, I have seen these birds working up and down on the Gaurishanker Lake, Bhavnagar, in search of fish. However, it is not usual to find them entering freshwater lakes unless only a few miles from the sea. But, while feeding, they will work up the rivers for some miles and I have seen them as much as 10 miles inland.

DISTRIBUTION. Breeding in the Persian Gulf, North Africa, Asia and Europe, but a Winter migrant to the coasts of India. Common on the Saurashtra coast during the Winter months.

FOOD. Mostly fish to the size of 8 inches, and marine life. They hunt from the height of 30 to 150 feet and drop down vertically to catch their prey. Against wind, they hover at one point with the wings beating or poise for a moment for some fish to rise. The fish is caught in the bill and flung into the air if it is a large one and swallowed head first. This is done while flying. In fact, most Terns adopt this method of swallowing large food.

INDIAN RIVER TERN

Gujerati Name—*Sāmānya Dhōmḍi*

Sterna aurantia GRAY

See Plate 43.

SIZE. About that of the Pigeon, but considerably slimmer.

IDENTIFICATION. Upper-parts, grey; lower-parts, white; a black crest on the head forming a cap. The slim pointed wings lie parallel to the forked tail

which is fairly long and sharply pointed when not spread-out. The bill is orange-yellow, and the feet are red.

NOTES. River Terns are mostly seen on freshwater lakes and rivers. They are active birds always chasing each other, and such gatherings are quite a common sight during the breeding season. Their flight is swift and graceful. They turn and twist with amazing skill. When not displaying, they fly with a slow wing-beat, often turning sharply in circles and making every pattern imaginable in the air. Their favourite resorts are sand banks and small open islands on large lakes. Here they roost or settle in the afternoon. The flight at times appears wavy though buoyant. In the air, they have a great command over themselves. The call is a monotonous *tee* or *kee* and also a few guttural squawks. A nesting colony of Terns will continuously call *tioo tioo*, *tee-tee* over the head of a visitor.

DISTRIBUTION. Most parts of India including Kutch, Gujerat and Saurashtra. A local migrant and breeding in some places in Saurashtra where there are large lakes or rivers. Fairly common on lakes during the breeding season.

NESTING. Season—February to April, some birds breeding earlier or later. During the courting time, they gather in small congregations, and wheel and chase each other in the air, making a frightful noise. Restless all the time, they continue their aerial manoeuvres until the breeding season is over. While courting, the male erects his crest and tail, and moves them up and down. After pairing, the birds generally colonise on an islet in a large lake and the whole area is occupied by them except for a few Lapwings or Great Stone Curlews or an odd pair of Black-bellied Terns; rarely does one find a solitary nest. A small islet may hold 20 pairs in the least. Two to four eggs, buffy-brown or greyish with darker spots, scrolls or streaks, are laid in a nest which may be a mere scrape or made up of some twigs and grassy lining usually picked up from the water's edge. One solitary nest I found was lined with small particles of gravel, much like the nest of the Red-wattled Lapwing. Most eggs are laid in February and March, but sometimes as late as April. Both sexes incubate and keep a very vigilant guard over the nest. In spite of this, House Crows manage to steal their eggs and sometimes even invade the colony, robbing the community of its eggs and young. These Terns invariably prefer small islets with no trees or bushes to nest on rather than large islands with trees and long grass. The same islets are occupied year after year, but sometimes quite different sites are made use of, depending much on the water level and the availability of food. When the young emerge, the parents will often bring food from long distances, and it is possible to see a number of small fish carried in their bills as they return to feed the chicks. The young in down are a pale biscuit-colour with dark spots while their bills and legs are orange. It is amazing how a chick can swallow a $1\frac{1}{2}$ inch fish, almost the size of itself. The

parent bird often dips the food in water before feeding it. The young are spotted or speckled and harmonise well with their surroundings. During incubation, the parent birds wet their bellies and then settle on the eggs to moisten them.

FOOD. Small fish and insects. Flying fairly low over water, they dive and pick up fish near the surface, and also swoop and catch those that are jumping out of water, even in the moonlight. A bird can pick up two to three fish at a time with consecutive swoops. As a rule, the birds do not plunge to the water from very high while feeding.

COMMON TERN

Gujerati Name—Pardéshi Dhōmḍi

Sterna hirundo LINNAEUS

SIZE. About that of the House Crow.

IDENTIFICATION. Upper-parts, pale grey; under-parts, white; cap, black; bill and feet, bright coral-red. By the latter characteristic this bird is distinguished from the Caspian Tern and the Crested Tern, and also by its smaller size. The fairly long whitish tail is pointed, and when spread-out, it is acutely forked. Like the Caspian Tern, this bird has a very smart appearance but, as in most other Terns during the Winter months, the head changes into plain white with a few dark streaks on the nape. I have seen birds in full plumage with their black caps in October and February-March.

NOTES. This Tern is entirely a Sea Bird and, therefore, it is seen only on the sea coast, usually singly. It is a graceful flier. In the common fashion of Terns, it keeps its head pointed downwards in search of food. On seeing its prey, it dives perpendicularly into the water, often submerging entirely, and rising without difficulty, it again climbs up into the sky for another dive. The height at which it flies over the sea is much greater than that of the freshwater Terns, e.g., River and Black-bellied Terns, and its plunges into water are much more awe-inspiring. Like the larger Terns, it has a harsh call.

DISTRIBUTION. Breeding in Europe, N. Asia and N. Africa, and migrating south to India along the coast of Saurashtra. Uncommon.

FOOD. Fish, crabs, prawns, insects, eels and other marine life. Its method of hunting resembles that of the larger Terns. It is seen diving from a height of 80 to 100 feet. It seldom settles on the water, being continuously on the wing for hours together. It follows the coastline for miles in search of food, and is considered one of the greatest travellers in the World.

BLACK-BELLIED TERN

Gujerati Name—Kālāpétṇi Dhōmḍi

Sterna melanogaster TEMMINCK

See Coloured Plate 18 and Plate 43.

SIZE. About that of the Myna.

IDENTIFICATION. This is a small Tern with a black cap, grey upper-parts and jet black under-parts. The bill is orange-yellow and the feet are orange-red. During Winter, the black of the head and belly is lost, and the bird assumes a grey and white plumage. Wings, long, slim and pointed; tail, pointed and deeply forked. Young birds are pale grey above but grey and white on the lower-parts while the cap is pure grey.

NOTES. This little torpedo-shaped Tern is not seen as abundantly as the Common River Tern, but as many as half a dozen pairs are sometimes found on the larger lakes and rivers. The bird has the same graceful flight as the larger Terns and is equally courageous in driving away Kites and Crows during the breeding season. I have never seen this species in large flocks; only a pair or two are seen together. It mixes with the River Tern in the breeding season and is similar to it in habits. It should not be confused with the Whiskered Tern which is often seen in groups, constantly uttering its call. The Black-bellied Tern emits its call only occasionally, but more so when disturbed at its nesting site. On the wing, it is capable of great speed. I believe there is no bird to excel this Tern for its mastery in the air.

DISTRIBUTION. The whole of India and Saurashtra. Resident and local migrant. In Winter, it is a local migrant all over the country.

NESTING. The nest is a mere scrape or depression in the sand. The site selected is usually on a small island. Although it is known to nest in large numbers, I have only seen a pair or two nesting in company of a colony of River Terns and also separate from the colony on small islets. Two eggs form the normal clutch, sometimes three. They are sandy-buff with reddish-brown splashes and are slightly elongated. The season almost coincides with that of the River Tern, but is, perhaps, a little earlier, from January or February to April. During courtship the male feeds the female; I have seen both birds flying up simultaneously while facing each other in the air almost vertically and then the male feeding the female. At that time, the birds are very active and call as they fly. When in full plumage, they have a very handsome appearance. If watched and followed carefully, their nests are not difficult to find. However, an intrusion on their nesting site perturbs them much and they make a tremendous noise, often swooping quite low over one's head. Both parents incubate and moisten the eggs during the hot hours of the day. This Tern as well as the River Tern shade the newly hatched chick from the hot sun.

FOOD. Small fish and insects in the water. The birds hunt much in the same way as the River Tern, swooping and diving to pick up food. They emit a *trek-trek-trek* as they fly in search of food.

TERNLET

Gujerati Name—Nāni Dhōmḍi

Sterna albifrons PALLAS

SIZE. About that of the Myna.

IDENTIFICATION. A miniature Tern, very much like the Whiskered Tern but smaller. In breeding plumage, it has a white forehead and a black cap. Bill, yellow and tipped black; legs, dull orange to brownish-red; tail, square-cut. It is the smallest Tern we have, and I have noticed this bird on inland lakes and jheels as well as the sea coast. There are a number of sub-species. Those commonly seen are in Winter plumage, and they are then whitish and pale grey birds with a black spot behind the eyes, a blackish bill and dusky legs. This Tern is usually seen during Winter in small groups or singly. It feeds by diving into the water in the same manner as the larger Terns.

NOTES. The birds I saw near Porbandar were in full plumage in May, and the males were displaying to the females by catching a fish and then settling near them. The male bird was observed moving his head and tail up and down, and with the wings moving, it enticed the female to accept food. This courtship was again observed by me at Gossabara. I suspected the birds to breed close by. Harrington-Bulkley found eggs of *S.a.saundersi* at Kharaghora. I recorded it in full plumage on 13th May, 1949, and courting on 18th June, 1949, at Porbandar, and it is probable that they nest off the coast northwards.

DISTRIBUTION. Europe, Asia and Africa, and migrating to Northern India and the Indian coastline. Fairly common in Saurashtra. There is every possibility of its nesting on the coast of Northern Saurashtra. Found in Kutch and Gujerat.

FOOD. Small fish, prawns and shell fish. As a rule, it does not fly high while hunting, and I have seen it as low as 6 feet, flying buoyantly over water.

RED SEA CRESTED TERN

Gujerati Name—Choṭīli Dariāi Dhōmḍī

Sterna bergi LICHTENSTEIN

SIZE. Slightly smaller than the Caspian Tern.

IDENTIFICATION. Distinguished from the Caspian by its longer black crest, yellow bill and slightly smaller size. The white forehead is also discernible, and the plumage appears whiter than in the Caspian. In Winter, the crown is often streaked.

NOTES. I have seen this bird on the Western Saurashtra coast. In habits, it is similar to the last, but seems to prefer open sea.

DISTRIBUTION. Red Sea, Persian Gulf and Indian coastline, breeding on the islands off the coast of Africa, Red Sea and the Persian Gulf to Mekran. A migrant to the Saurashtra and Kutch sea coasts. Uncommon. Groups of these birds are regularly seen at Porbandar, Navibandar and Mangrol.

FOOD. Fish, prawns and other marine life.

INDIAN SKIMMER

Gujerati Name—Jaḷ-Haḷ

Rhyncops albigollis SWAINSON

See Coloured Plate 1.

SIZE. About that of the Jungle Crow.

IDENTIFICATION. A large black and white Tern-like bird with a long, stout bill and a rather grotesque appearance. The lower-mandible is longer than the upper one. The forehead, sides of head and neck are white while the crown and nape are black. Upper-parts, blackish-brown, including the wings; lower-parts, white; tail, white, long and pointed; bill, orange-red or bright coral-red; legs, coral-red. The wings are very long and pointed. The bird can be seen skimming over the surface of the water as if ploughing it with the bill; it rises to some height and repeats the performance. In this way it feeds off the surface of the water. The flight is fairly fast with a medium wing-beat, much like that of a Tern.

NOTES. The Skimmer is not common in Saurashtra; on the contrary, it is rather rare, being seen on the larger lakes and rivers at odd times of the year. The Yuveraj of Jasdan saw a few birds on the Jasdan lakes, on 8th August, 1948.

Some birds recorded by me were seen in the middle of the hot weather: May 1934, June 1936, July 1951. But a recent record was made in December, 1951. Generally I have seen single birds and pairs, but once I came across a large flock consisting of about 250 birds at the mouth of the Shatrunji River during the Winter months. They were packed close together on a mud bank and permitted me to reach within 60 yards before they rose. I have not yet found them breeding with us.

DISTRIBUTION. Not uncommon on the large rivers of India but rare in Saurashtra.

FOOD. Aquatic life, usually taken from the surface.

COMMON INDIAN SANDGROUSE

Gujerati Name—Déshti Batāḍō

Pterocles exustus erlangeri NEUMANN

See Coloured Plate 19.

SIZE. Somewhat smaller than the Pigeon.

IDENTIFICATION. Male: Upper-parts, clay-yellow to khaki with an ash-grey tinge on the head; wings, brown with white edges; splashes of brown on the upper-parts; a black line forming a girdle on the breast; lower-parts, dark chocolate; tail, narrowly pointed and with two very thin feathers of uniform colour tipped blackish-brown; legs, short and grey to fleshy. The female is much more spotted, her upper-parts being more or less barred; the breast is distinctly spotted, and the tail is barred including the two long pointed feathers which are shorter than in the male.

NOTES. This is our commonest Sandgrouse, being found in all types of open country, especially on fallow ground. Ploughed open fields, desert country around cultivation, barren stony hills, and areas with short grass are places where it is mostly seen. It is also found on salty flat ground. During the breeding season, it sometimes enters scrub jungle. Sandgrouse always settle on the ground, harmonizing exceedingly well with their environments. It is only their movement which betrays their position, and it is rather wonderful how a flock makes its appearance on the landscape by slowly coming one by one into view until the whole flock is visible as it commences to feed. The birds are found in pairs, in fives, or in any number ranging from 10 to 200 birds. They are very fast fliers, covering long distances in search of food and water. As they fly, they emit a call like a *pat-patāck* which is repeated at intervals. In mornings and evenings, they come to water regularly: in the

morning from about 7.30 in Summer, and from about 9.00 to 9.30 in Winter, and, if undisturbed, again from 4.00 to 7.00 in the evening. They arrive in waves at open lakes, ponds and small river pools and streams, swooping down suddenly and then rising in characteristic fashion and often circling over until they finally land at the water's edge. As the birds alight, the dark wing-primaries show up well. They are popular Game Birds which afford excellent shooting.

DISTRIBUTION. The whole of India including Kutch, Gujerat and Saurashtra; more abundant in the desert areas of Northern India. Common, resident and prone to local movements.

NESTING. Season—Throughout the year but mostly from November to May. The bird seldom lays during the rainy months. The nest is a scrape on the ground with a few grass blades added to it. The male selects the site by nodding his head up and down, somewhat like a male Pigeon on the nest, inviting his mate to come there. A number of scrapes may be made before the site is finally selected. Three eggs form the normal clutch. They are yellow to reddish stone colour with fine streaks of brown, and are long and oval. Both birds incubate, sitting very close. Ploughed fields and barren stony ground are favourite areas for nesting, but I have found nests in all types of ground except in crops, forest and dense grass. When single birds are seen separate from the flock or pair, it usually indicates that the birds are breeding. The young in down are striped and mottled with a rich brown colour and are precocial, leaving the nest as soon as they are hatched. The birds seen in pairs on the ground, except at watering places, sometimes convey the idea that they are about to nest, or already have chicks. The parent birds sometimes feign injury to draw away danger from their young.

FOOD. Consists of grass-seeds, grains, vegetables-sprouts, etc. They eat grit with most of their food to assist digestion. Local movements at different times of the year depend much upon food and water.

SPOTTED SANDGROUSE

Gujerati Name—Waku-Waku

Pterocles senegallus LINNAEUS

See Coloured Plate 20.

SIZE. About that of the Pigeon.

IDENTIFICATION. Male: Crown and upper-parts, biscuit-grey; upper tail-coverts and rump, buffy-yellow; area round eyes and sides of head, grey, forming a collar at the nape; a greyish line bordering the throat; primaries, biscuit-

coloured with brown shafts and tips; secondaries, brown; lower-parts, sandy-pink; centre of abdomen, black; tail-feathers, brown with white tips, except the central tail-feathers which are pointed and blackish-brown; bill, bluish-grey; feet, paler. The female differs in being darker and boldly spotted with blackish-brown; her head is finely streaked and the breast is spotted.

NOTES. I have not come across the 'Waku-Waku' in Saurashtra, but reliable records of its occurrence in N. Saurashtra from Nawanagar to Dhrangadhra have been made. Major Lakhdhirsinhji of Kondh, Dhrangadhra, tells me that these birds have been shot from time to time in Dhrangadhra during Winter. He says that they are more often seen than the Imperial Sandgrouse. They are, however, irregular migrants from Kutch. The bird's call is a *waku-waku* from which it gets its Indian name. It is slightly larger than the Common Sandgrouse and faster on the wing. It prefers dry areas and desert, and sometimes enters arid stony country.

DISTRIBUTION. Algeria, N. Africa, Egypt, Arabia, Afghanistan, Pakistan and N.W. India. Fairly common in Kutch where it is resident, but rare in Saurashtra. Hume and Marshall, in "Game Birds of India, Burma and Ceylon", Vol. I, page 53, mention the distribution as "most southerly, Patri at the S.E. corner of the lesser Runn, and Nawanagar in Northern Kathiawar". Refer to B.N.H.S. Journal, Vol. XXVI, Page 674: "I was shooting with His Highness the Maharaja Jam Saheb at X'mas Our bag in three or four days round Balambha also included Sindhi Grouse". Breeding range in India is uncertain. Harrington found it breeding close to Kharaghora.

FOOD. Grain and seeds. The birds are very strong, flying long distances for food and water.

IMPERIAL OR LARGE BLACK-BELLIED SANDGROUSE

Gujerati Name—Shāhi or Moṭō Rājāsthāni Baṭāḍō

Pterocles orientalis LINNAEUS

See Coloured Plate 20.

SIZE. Larger than the Pigeon.

IDENTIFICATION. Male: Head and neck, grey mixed with rusty-brown; chin, throat and side of neck, chestnut; lower-throat, black; upper-parts, khaki grey-brown; back and scapulars, purer grey with dull yellowish markings; a black pectoral band on upper-breast; lower-breast to belly, black; tail, pointed and long. The female is much lighter, having a pinkish tinge; she does not have the black breast, the chestnut neck or the black throat, and is more mottled

above. This is the largest of our Sandgrouse. In flight, the white underside of the wing is a good pointer.

NOTES. It is a Winter migrant in the desert country, and large numbers, as many as thousands, come to drink during mornings and evenings at watering places in Northern India. It is a big bird with a very rapid flight, and comes from long distances to drink at probably the only watering place in the desert. It is found on absolutely barren ground. With us, it is extremely rare and only seen occasionally in small flocks during Winter in the neighbourhood of the Little Rann of Kutch.

DISTRIBUTION. Breeding in Africa and Asia Minor to Afghanistan, and migrating in large numbers to Northern India during the cold weather. It is only found in the desert regions and is a regular visitor to Kutch. It also occurs in the desert areas of Gujerat. In Saurashtra, it has been recorded at Nawanagar and Dhrangadhra as a rare visitor. See Journal of B.N.H.S., Vol. XXVI, Page 674: "I was shooting with His Highness the Maharaja Jam Saheb at X'mas..... Our bag in three or four days round Balammbha also included..... a few Imperial and Sindhi Grouse." In Dhrangadhra, His Highness the late Maharaja Raj Sahib had shot them frequently, and Major Lakhdhirsinhji of Kondh has recorded them a number of times close to the Rann.

FOOD. Grass seeds.

PAINTED SANDGROUSE

Gujerati Name—Pahādi or Rangeet Batāḍō

Pterocles indicus GMELIN

See Coloured Plate 19.

SIZE. Between the Myna and the Pigeon.

IDENTIFICATION. Male: A mottled khaki-brown bird distinguished by its patch of white on the forehead followed by a transverse black band, and again by a white one. The crown is streaked with black and the breast is khaki with three broad bands of chestnut, white and black respectively. The lower-parts are barred finely with black and the upper-parts are blackish, each feather being edged with khaki. The wings have patches of white, dark grey and khaki but the flight-feathers are blackish-brown. The eyes are brown, the short bill is reddish, and the legs are short and brownish. The tail is not sharply pointed as in the Common Sandgrouse but much like a blunt point, and is barred with black. The female is barred above and below with black and khaki,

and she lacks the conspicuous colouration of the male. In both sexes, the eyes have a sage-green ring which forms part of the eyelids. The young are buff coloured like female Rock Bush-Quail.

NOTES. This bird is often called the Rock Grouse by sportsmen. It affects open, rocky, grassy hills as well as wooded ones, and stony broken country. From this typical habitat it often comes down to feed in the open fields. It usually restricts itself to its natural habitat and does not go far beyond that particular type of country. Although it is occasionally seen close to the Common Sandgrouse, I have rarely seen the two species actually together. This is a handsome bird and yet it matches with the background wonderfully well and it is surprising how close one can approach without noticing it. In habits, it is crepuscular and, to some extent, nocturnal, flying early in the morning and late in the evening for its food and drink. It is often seen and heard during moonlight nights. The call is a *yek yek*, repeated between brief pauses. Otherwise, it is a silent bird. Stony hills and grassy slopes near the tops are its favourite grounds, but scrub jungles and shallow ravines mixed with fallen stones is where I have seen it most. One may look for it at the base of hills, on flat ground studded with stones almost the same size as itself. I have seen it frequently in the heart of the Gir Forest where, in the evening, it comes out to the open patches to feed. However, in thin scrub forest on the outskirts of the Gir, it is abundant. The birds fly to water holes at dusk, sometimes in fairly large numbers, calling in their characteristic manner. In flight, the Painted Sandgrouse is fairly fast, but slightly slower than other Sandgrouse. When hard pressed by Falcons, it sometimes suddenly drops to the ground and attempts camouflage which is a very strange behaviour for such a bird. It is much persecuted during its breeding season by nomadic tribes.

DISTRIBUTION. Most parts of India including Kutch and Gujerat, and fairly common in Saurashtra. Resident wherever found.

NESTING. Season—Main months are December to May; rarely August to October, also. The nest is a mere scrape on the ground. Three eggs are laid which are elliptical, of a pinkish-buff colour and spotted with purple; some are of almond-cream colour with lavender spots. Both sexes incubate. They are firm sitters, permitting close approach. They prefer a typical habitat for nesting: hills full of boulders and grass or isolated rocky hills. The nest may be placed in dry ravines or on the plateau of a hill.

FOOD. Mostly grass seeds, vegetable sprouts and grain. The birds also feed on green shoots. During the early Monsoon, they have a predilection to feed upon certain grass seeds and, where these are found, the birds are reluctant to leave the feeding ground even when persistently shot at.

SOUTHERN GREEN PIGEON

Gujerati Name—Hariyāl

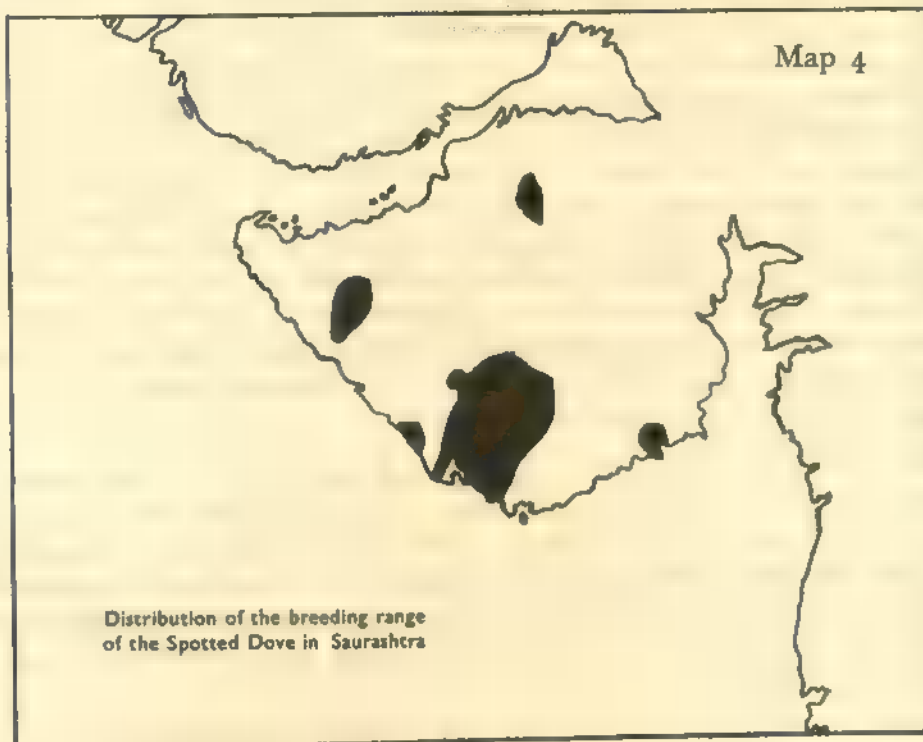
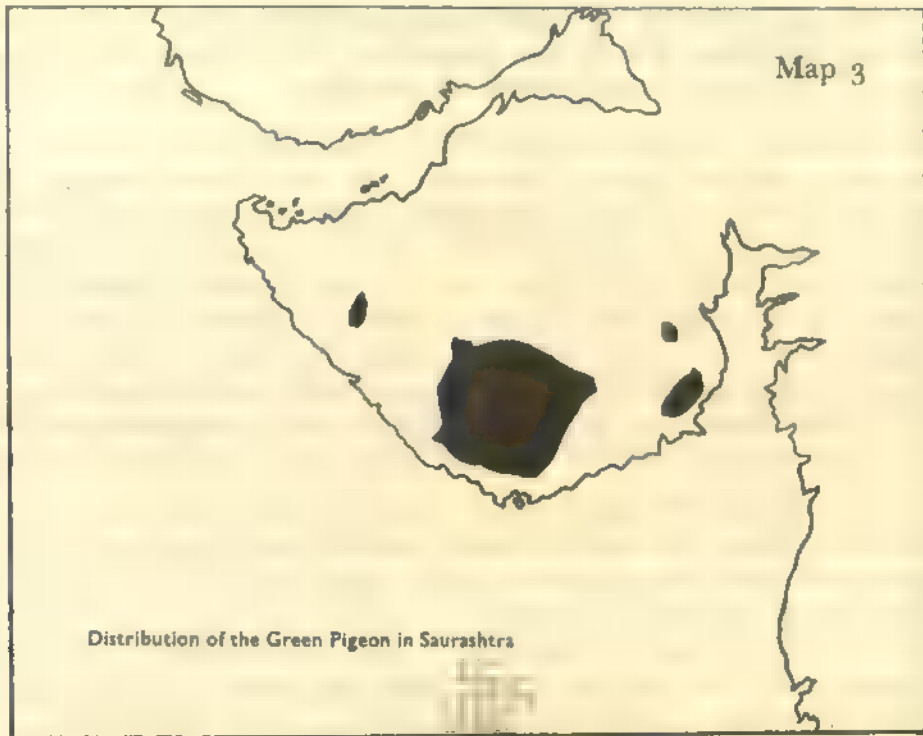
Treron phoenicoptera chlorigaster BLYTH

See Coloured Plate 19.

SIZE. About the same as the Pigeon.

IDENTIFICATION. Head, grey, with the eyes a beautiful pink bordered with greyish-purple. Bill, greyish, tipped white, hooked and fairly thick. Legs, orange-yellow, but bright to dull yellow in some birds. Back, greenish-grey; wings, blackish and streaked with yellow. There is a conspicuous purple patch on the wing-coverts. The lower-parts are yellow to pastel yellowish-green, the vent being white with reddish-brown bars. The tail is greyish with a dark band at the end, the central feathers being greenish. Sexes alike.

NOTES. The 'Harial', as it is locally known, is found amongst evergreen trees in which it camouflages excellently and is very difficult to spot. It frequents a hilly type of country, either forested or where there are large trees such as the Mango, the 'Jambuda' and the 'Ficus' varieties. It seldom visits urban areas, being a bird of mango-plantations and forests. It is seen in pairs or in flocks of up to a hundred birds when the 'Ficus' fruits are ripe. I have seen hundreds of these birds on the borders of the Gir, flying into large Banyan trees to feed on the fruits, where many other birds such as the Koel and the Myna had already gathered, making a frightful noise. They often bend at all angles in order to get at the fruits, and it is interesting to watch them walk along the branches sideways, much like Parakeets. They are not rare in their own habitat but are prone to local movements in search of food. During the breeding season, they emit an attractive whistling call which resembles the sound of an instrument called the swany-whistle. The whistle reaches a high key and then comes down to a low one. The birds also emit a guttural note. When resting, however, they are silent. They have a habit of turning their back towards danger, thus showing their vent the design and colour of which resemble dead wood with reddish fungus attached to it. They are normally crepuscular and nocturnal, sleeping most of the daytime. This beautiful Pigeon is hunted by sportsmen as it is considered good eating and is persecuted by local hunters. In places where it is hunted, it becomes wily and difficult to approach; otherwise, it can be seen during the daytime at fairly close quarters. By moonlight, these birds are often seen in pairs, climbing the branches of 'Ficus' trees where the fruits are ripe or hopping from one branch to another; but when motionless, they are among the most difficult birds to spot at close quarters. The Green Pigeon should in every way be protected, especially in parts where it is becoming



rare. Trees are its home, but I have sometimes seen it alight on the ground for a drink. Its flight is rapid and Pigeon-like. When disturbed, it literally drops out of trees to fly swiftly away in all directions.

DISTRIBUTION. Western India and Gujerat but patchy in Saurashtra, depending much upon the type of vegetation (See Distribution Map 3). It is common in the Gir and adjacent areas in South Saurashtra and was not until recently uncommon in the Khokhra Hills, the Sihor Hills, Kardej and Palitana in Eastern Saurashtra. It is almost absent from Western Saurashtra, and, strangely, rare or uncommon in the Barda Hills. In Central Saurashtra, it is a straggler. Also, it is absent or a rare straggler in parts of Jhalawar, e.g., Dhrangadhra, Wankaner and Limbdi. It is resident in the areas where it is regularly seen. There is no doubt that the Gir area is its stronghold. Much of its survival depends upon the existence of the 'Ficus' and jungle fruit trees.

NESTING. Season—February to June, most birds laying from March to April and rarely in May. The nest is usually made in evergreen trees such as the Mango or the 'Ficus' in plantations or in valleys in forest areas. However, in forest areas the selection is more variable but large trees are most preferred. The nest is a very flimsy affair, made of sticks or twigs, and is placed on a branch usually towards the end but fairly well-camouflaged though not, in the true sense, hidden. Sometimes the eggs fall out of the nest owing to strong winds that shake the branches, and they are only kept safe by the parents continuously sitting on them. Two white glossy eggs are laid, and at this time the parents are remarkably brave, not leaving the nest even when closely approached. Some birds raise their wings in defiance if disturbed. Crows, which are their chief enemies, destroy a great number of eggs, but Green Pigeons learn to nest in the same tree in which the King Crow is nesting, knowing that he will attack all intruders. Two, or rarely three, nests may be found on one large tree. The birds have a beautiful courtship prior to nesting, the male stretching his wings above his head and puffing out his chest while emitting a very sweet whistle. It also utters a guttural *wāk*. The young birds are yellowish-cream, assuming a greenish tinge as they grow. They are very much like young House Pigeons in appearance. The parent birds feed them by regurgitating milk, the result of semi-digested food.

FOOD. The bird feeds entirely on fruit and berries of wild trees, mostly of the 'Ficus' genus. As these trees are being destroyed rapidly, the Green Pigeon becomes rarer day by day. It is not harmful to fruit orchards as it might be supposed. In its excreta, it disperses large seeds of many kinds of forest fruits which are not eaten by smaller birds. In this manner, it is largely beneficial.

BLUE ROCK-PIGEON

Gujerati Name—Kabūtar or Pārēvūṇ

Columba livia intermedia STRICKLAND

SIZE. Somewhat smaller than the House Crow.

IDENTIFICATION. This bird needs no description as it is well known.

NOTES. The Blue Rock-Pigeon is one of our commonest birds, being found in great numbers in large cities, villages and the countryside. Innocent as it appears, it is a great pest in the house, spoiling the place wherever it sits. It also pollutes the drinking water by roosting and nesting inside wells. Every house or mud-cottage is visited by the Pigeon, and it becomes extremely tame where it is fed and protected. It enters houses and verandahs where it readily makes itself at home. It has a well-developed homing instinct. I have taken these Pigeons 20 to 30 miles away from their nests and have noted their return the very next day. On account of this useful instinct of finding their way home, Man has bred the Pigeons for generations and produced a breed called the Homer which is used for carrying messages. And in war time these Pigeons render valuable service. The House Pigeon has a fast flight, and flocks travel great distances in search of food. But hand-fed birds come regularly to the same place to be fed. They are seldom killed by Hawks, but Eagles take them at times, and the Peregrine Falcon is their chief enemy. They interbreed freely with fancy varieties, hence we see assorted patterns and colours amongst wild birds close to towns. Our common Blue Rock-Pigeon does not have the white rump patch so often seen in interbred birds. Sexes alike.

DISTRIBUTION. The whole of India and Saurashtra. Common and resident.

NESTING. Season—Throughout the year. The usual nest is made of twigs or stalks of the 'Neem' tree. The birds build in houses, wells, temples, and holes. Any ledge will suffice, and sometimes they lay in such odd places that the eggs roll and fall. In the house, such a mishap is common. And, in wells, the young often fall into water. On the sea coast, the birds nest in holes under the cliffs. In many a way, this is a stupid bird, having no sense in its choice of a nest-site, and I have seen birds taking up nesting material to a place from where it had repeatedly fallen to the ground. The climax to this is that the bird lays its eggs straight on the floor. The male invariably selects the nest-site, and when the eggs are laid, both birds incubate. He has a slightly thicker and brighter neck, and puffs out his chest more. The courtship consists of the male puffing out his chest and bowing and turning round in circles. The birds show much affection by caressing each other often. Two white eggs form the normal

clutch. The young are fed by regurgitation by which predigested food is transformed into a milky substance.

FOOD. Chiefly grain, seeds, and green shoots; rarely termites. Small grit and pebbles are swallowed to aid digestion. The birds are known to damage newly-sprouted vegetables and gram.

RUFOUS TURTLE DOVE

Gujerati Name—Shiyāḥ Holi

Streptopelia orientalis LATHAM

SIZE. Slightly smaller than the Pigeon.

IDENTIFICATION. Head, warm buff to vinous-pink, with some grey on the forehead and crown, and a spotted grey pattern on each side of the neck; back to rump, rufous-brown and grey; tail, brown; wings, dark blackish-brown, but wing-coverts, dark ash-grey. Scapulars and wing-coverts, edged with a ferruginous tinge. Lower-parts, brick-red to reddish-brown becoming white on the abdomen; throat, white; under tail-coverts, white. Eyes, red; legs, dark red. In flight, the pure grey under-wing may be seen.

NOTES. The bird may occasionally be seen in forested areas during Winter. The Yuveraj of Jasdan has recorded it at Jasdan.

DISTRIBUTION. Western and Central Asia and the Himalayas, and migrating south to most parts of India. Occasionally seen in Saurashtra during Winter.

FOOD. Same as most Doves.

INDIAN SPOTTED DOVE

Gujerati Name—Vana Holi

Streptopelia chinensis suratensis GMELIN

See Coloured Plate 19.

SIZE. Slightly smaller than the Pigeon.

IDENTIFICATION. This Dove is pinkish or bright brick-red to vinous-pink on the lower-parts, grey on the head and nape, and mottled above with reddish-brown and fawn. The wing-coverts are grey and buff, and streaked with black; the sides and back of the neck are black, dotted with white. The tail is fairly long and the legs are red. This Dove is larger and longer than the

Little Brown Dove, but gives some impression of that bird. The call readily identifies it, being a *trooo-trooo* or *trooo-trooo-troo*.

NOTES. It is found in well-wooded areas and is typically a forest-loving bird, being seen in the hills as well as in the plains. It is prone to local movements, and its sudden appearance and disappearance are characteristic. Such occurrences are common between August and November, just after the Monsoon rains. In its breeding area, it is resident throughout the year, and is not shy in its own habitat, allowing fairly close observation. These Doves are seen feeding on dusty roads and they suddenly fly up as one approaches. They can get away fast into the air with a few flaps and twists of the body. In the hot months, they come and drink regularly during the warm hours, at which time one can observe them at close quarters. In some places, they are shot for sport as well as for food. They prefer to sit on low branches and on trees with little or no leaves and, when motionless, it is remarkable how well they blend with the background. Also, they remain on the ground for quite a long time if left undisturbed.

DISTRIBUTION. Most parts of Western India except the driest ones. In Saurashtra, it has a patchy distribution (see Distribution Map 4), restricting itself to well-wooded areas. I found it plentiful in the Gir Forest and the Girnar, and in good numbers in the Barda Hills where it is resident. On the Eastern Coast, it is resident in Mahuva, and on the West Coast from Mangrol to Porbunder. In Northern Saurashtra, I have seen some birds at Wankaner. They have been noted as local migrants in other parts of Saurashtra such as Palitana. A few birds occasionally straggle into the Gondal area. A few pairs introduced in Bhavnagar have by now established themselves.

NESTING. Season—Almost throughout the year, depending upon local conditions. In the Barda Hills, the Doves breed in April and May and possibly earlier, while in the Gir most birds are in moult from April to June, signifying that they breed earlier. Most birds in Mangrol and Mahuva breed from December to May. Some birds collected in Eastern Saurashtra between June and October were in moult while others were in full plumage. The nest is small and flimsy. It is made of slender twigs and placed fairly low, from three to ten feet, in shrubs, thorny bushes or trees. Two white eggs form the normal clutch.

FOOD. Consists of grain, seeds, berries, termites and green sprouts of grasses. In the Gir area, the birds come fairly close to habitation to feed but they are slightly more alert than the common Little Brown Dove.

LITTLE BROWN DOVE

Gujerati Name—Khūmri

Streptopelia senegalensis cambayensis GMELIN

SIZE. About that of the Myna.

IDENTIFICATION. A dull brick-red Dove with a spotted pattern of black and reddish-brown feathers on the side of the neck and in front. The eyes and legs are red. The head of the male is of a brighter colour, almost a light pink. The female is duller. There is a small grey patch on the wing-coverts, and the upper-parts are almost uniformly coloured and unmottled.

NOTES. This Dove is perhaps our commonest, and is seen all over the countryside. It is found in gardens, jungle, cultivation and vegetation, and close to habitation where it is often seen on roofs and walls, and inside verandahs. It is numerous in the neighbourhood of villages. While courting, the male bows his head and inflates his chest, lifting his tail and at the same time emitting a *coo-coo-roo-roo*. At times, the tip of the tail is drawn along the ground. In his courtship display, the male suddenly flies up almost vertically with rapid wing-beats and then sails down with his wings and tail spread-out. A female, approving of this, flies past with the male following her. Until the female flies past the male, the display is repeated again and again. These Doves are often seen feeding on the roads and flying up with a clap of wings as they rise perpendicularly. They fly with intermittent flaps, travelling fairly fast. I have heard them calling on moonlight nights.

DISTRIBUTION. The whole of India including Kutch, Gujarat and Saurashtra. Resident and common.

NESTING. Season—Almost throughout the year. However, most birds nest from October to April. The nest is a small and flimsy affair, made of rootlets and slender twigs, usually of 'Bōrdi' (*Zizyphus*). It is small and can just bear two eggs which form the clutch; these eggs are white, and not completely round. The nest is placed on a branch of a tree, or in a thorny shrub, or on any kind of small tree or bush. Birds close to habitation sometimes build inside houses. The nests placed in bushes are not always easy to find, but those in small thorny trees are not so difficult. I have also seen them placed in *Opuntia* and *Euphorbia* hedges. When brooding, the birds allow close approach but fly off the nest suddenly when frightened. Like most Doves, they pair for life and show great affection towards each other.

FOOD. The bird feeds mostly on seeds and grains, and sometimes on termite and green shoots. Grit is taken for digestion.

INDIAN RING DOVE

Gujerati Name—Dhōl

Streptopelia decaocto decaocto FRIVALDSZKY

See Coloured Plate 19.

SIZE. Slightly smaller than the Pigeon.

IDENTIFICATION. This is rather a large uniform greyish-buff to pale greyish-white Dove. On the neck, it has a black ring edged with white. Eyes, red; legs, reddish-pink to purplish; bill, black. It is seen mostly in 'Babul' thickets in open country and thinly forested areas but less often in gardens. A few trees are enough to attract it. It may be found anywhere near villages and in the open fields, in dry as well as well-watered areas but not in thick forests. During the cold weather, large flocks of these Doves are seen in open country, feeding on the ground and under 'Babul' trees, sometimes quite in the open. The call is ■ coo-coo-coo-coo, and the bird has another short one, something like a *hūn*, which indicates anger or defiance. I have heard this bird calling during moonlight nights. Sexes alike.

NOTES. It is quite a common bird but prone to local movements. Generally, almost all 'Babul' thickets harbour it at all seasons. Such wooded areas reverberate with incessant coo-ing which can be heard at a fair distance almost throughout the day. In flight, the bird is fast but the wing-beats are in one continuous movement, and although the flapping is not rapid, it moves at quite a fast pace. It is shyer than the Little Brown Dove but while in or near villages where it regularly comes to feed, it permits close approach. Flocks rapidly flying in the early morning and leaving the woods for their feeding grounds is a common sight.

DISTRIBUTION. Throughout India including Kutch, Gujerat and Saurashtra. Resident and common.

NESTING. Season—Nearly all the year round. Like all Doves, they build a flimsy nest scantily made of slender twigs. The two white eggs can be seen from under the nest. The site can be any sort of thorny or evergreen tree. However, most nests are in 'Babul' thickets and the height varies from five to twenty feet. But I have found nests at heights of thirty feet or over on the 'Ficus' trees, especially when the birds nest under the protection of Eagles and Laggars which are nesting on the same tree. I have also seen them nesting on slender branches of the Banyan (*Ficus benghalensis*) tree, amongst the large leaves, in company with Green Pigeons. Although the nests are not conspicuous, normally they are not difficult to find, though it is at times hard to detect the bird sitting from a distance as it camouflages so well with the background. The Crow is its chief enemy, always menacing its young and

eggs; nevertheless, I have seen the Dove becoming rather aggressive and driving away Crows and Tree Pies in a regular manner. The courtship display is much like that of other Doves, coo-ing and flying straight up into the air and then gliding downwards, or in a circle, with outspread wings and tail.

FOOD. Mostly seeds, grain and green sprouts. It feeds during early mornings and evenings, flying long distances in search of food. It swallows small grit to help digestion.

INDIAN RED TURTLE DOVE

Gujerati Name—*Loṭaṇa Holi*

Streptopelia tranquebarica tranquebarica HERMANN

See Coloured Plate 19.

SIZE. About that of the Myna.

IDENTIFICATION. In shape and markings, it is like the Ring Dove but smaller in size, and the female of this species can be confused with the female Ring Dove. The male is easily distinguished as his upper-parts are of rich pinkish or coppery-pink colour, especially the wing-coverts; the rest of the body is grey and there is a black ring on the hind-neck. The female is more uniform khaki-grey. The male has the head and rump including the tail bluish-grey. The tail has a subterminal band which is not always present. The eyes are brown and the legs are red.

NOTES. It is less common than the Ring and Little Brown Doves but at times, and specially in Winter, it can be seen in large flocks. It is found in 'Babul' thickets and open arid country and is prone to local movements, appearing suddenly with the Monsoon. During Winter, I have seen large flocks feeding on grain in 'khalavāds'. The birds are then rather shy, but much less so when breeding. The call is quite different from that of the Ring Dove, but it sounds something like the rattle of the snake charmer's small hand-drum. The flight is very fast and the bird can get up in the air and shoot away rapidly. Flocks often swoop down at tremendous speed and rise much in the same way as Sandgrouse. This Dove prefers arid scrub country and is often seen together with the Ring Dove.

DISTRIBUTION. Most parts of India including Saurashtra. Resident and fairly common.

NESTING. Season—Almost throughout the year, the principal months being from April to June and again from September to November. I have seen the birds breeding after a good shower of rain, although many breed after the

heavy rains are over, *i.e.*, September and October. It seems that rainfall during Summer acts as a stimulus for them to breed. I have seen the bird nesting in the 'Babul' and other thorny trees in company with the King Crow. It seems to take the protection of this brave bird, being aware that the safety from predatory birds entering the tree is assured. It often breeds in small colonies. The nest is the regular Dove-type, placed on the fork of a branch at a height of six to twelve feet, and two ivory white eggs form the usual clutch. At Chānch on the south-east coast of Saurashtra, I found a colony of these Doves breeding in small trees in a row, and two nests on one tree were quite common.

FOOD. Mostly seeds, grain and green shoots taken off the ground.

INDIAN ROSE-RINGED PARAKEET

Gujerati Name—Popaṭ or Sūḍō

Psittacula krameri SCOPOLI

See Coloured Plate 19.

SIZE. Slightly larger than the Myna with a long, pointed tail.

IDENTIFICATION. This bird hardly needs any introduction as it is one of our commonest birds. Upper-parts, green but with darker flight feathers. Long feathers of the tail, bluish-green. Lower-parts, greenish-yellow. Under-wing, more yellowish and conspicuous in flight. The beak varies in having the mandibles reddish to reddish-black. Legs, greenish-slate to fleshy. Eyes, usually pale yellow. The male is distinguished by having a rose-coloured ring on its neck, and a black line forming a collar starting from the beak and circling upwards towards the nape. The female differs in not having a conspicuous collar which is replaced by an indistinct pale line across the neck. Also, she is a little paler, with the beak not so brightly coloured. The birds are seen in pairs as well as in flocks as large as 400 or more. In flight the round head, the short wings and the long tail are characteristic.

NOTES. These Parakeets prefer to alight on green trees and a flock may become quite invisible against such a background. They are sometimes seen screaming at and harassing large Birds of Prey while in flight or when perched; also, they menace small animals which threaten their safety by screaming and gathering into a flock to attack the intruder. This often occurs near their nest sites. During the rains, Parakeets play in the air, turning and circling high up. I have seen them chasing Golden Orioles and other birds just for fun. The normal flight is rapid but rather uneven; the birds turn and circle in their course frequently. In spite of short wings, the flight is fairly swift and only Falcons

and Eagles dropping from above can catch them. I have seen them being preyed upon by Lagger Falcons, Eagles, Shahins, and Peregrines. In this Parakeet, one gets freaks in colouration, the popular one being a yellow bird with a rosy ring on the neck. This freak is called a 'Lutino' and is much valued* by Aviculturists. The Parakeet is a popular cage bird but is not a good talker; it can with difficulty be trained to whistle well, and can also be trained to perform various tricks. My father had an expert who trained Parrots and Parakeets and they could be made to ride a miniature bicycle or a tricycle, drive a car, turn a merry-go-round, walk round a temple ringing the bell and garland the idol god; they could also perform acrobatic stunts and loop the loop in a ring, shoot off a miniature toy canon, and do such other tricks. Young birds can be kept as pets but are rather noisy when they grow up.

DISTRIBUTION. Most parts of India and throughout Saurashtra. Common and resident.

NESTING. Season—January to June. Odd birds may lay at any time. The nests are carved out by the beak, and the holes in walls, buildings and trees are made use of. Natural hollows in trees are also used. The eggs number three to five and are white ovals. The courtship display is interesting to watch. The male dances in front of the female, raising his feet in the air one at a time and swaying his body from side to side, accompanied by bowing and caressing.

FOOD. Mostly berries and other fruits, though tender leaves and nectar from flowers and buds are also taken. Seeds, and pods of leguminous plants are also favoured. The birds are destructive to grain, gram, vegetable crops, and fruits. Standing crops are affected by them and the farmer has to keep a vigilant guard to protect his crops. In short, Parakeets are harmful to agriculture and horticulture.

* A bluish coloured freak is more highly valued.

BLOSSOM-HEADED PARAKEET

Gujerati Name—Tūi

Psittacula cyanocephala LINNAEUS

See Coloured Plate 13.

SIZE. About that of the Myna.

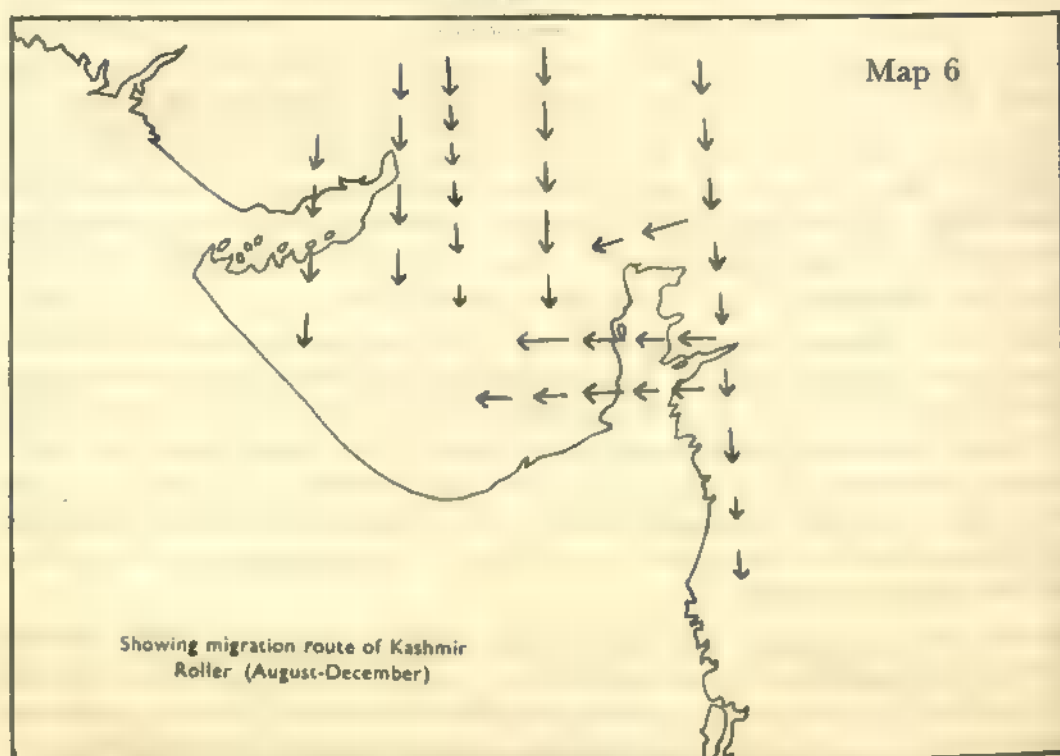
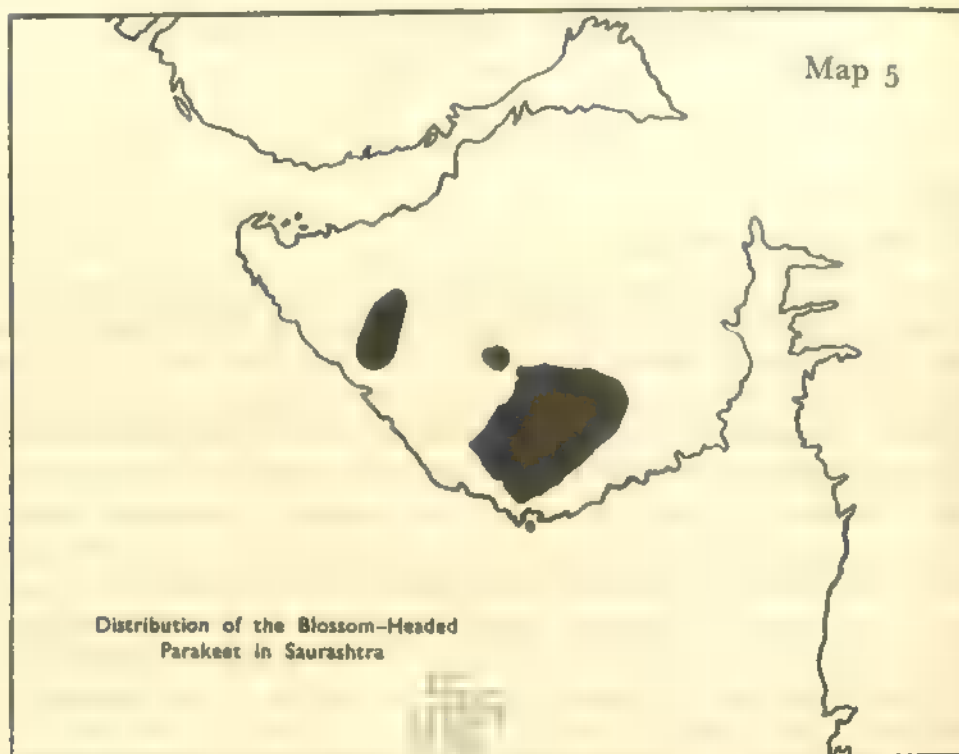
IDENTIFICATION. A small Parakeet with reddish plum-coloured head, at times appearing pinkish-red. Upper-parts, green with a small dark red patch on the wing-coverts; lower-parts, greenish-yellow. The long tail is bluish with a white tip. The female differs in having an ash-grey head and in being paler below; the tail is shorter and the red patch on the wing-coverts is obsolete. The beak in both sexes is orange-yellow; the lower-mandible is black.

NOTES. This very beautiful Parakeet is not common in Saurashtra; yet it can be seen at any time in the Gir Forest and its environs as well as in the Barda Hills. It has a distinct short whistle by which it can be easily recognised. This whistle is a *queek*, and is generally uttered while flying. When perched, it has an upright body-pose and has a habit of alighting on the topmost branches of trees. These Parakeets are shy birds resenting close approach and, when frightened, dive off their perch and speed away swiftly. They are typical jungle birds, seldom entering cultivation. They are usually seen in pairs, and I have never met them in very large flocks. While flying, they frequently change their course and emit their *tui* from which they get their Indian name. They are popular cage birds. In this species, too, one occasionally finds 'Lutinos', with a rosy pink head.

DISTRIBUTION. Wooded areas of India and Saurashtra (See Distribution Map 5). Mainly breeding in the Gir and surrounding hills, and also in the Barda Hills. On the eastern side of the Gir, the birds' breeding range extends to Mitiala in Gohilwad. Originally, the range extended to forest tracts which have now been destroyed. Elsewhere, they spread-out as stragglers during Winter.

NESTING. Season—December to June. The bird makes its nest in hollows in trees. It also carves out its nest in trees or makes use of old nests of Woodpeckers. The nests vary in height from 8 to 20 feet or more, and the birds are fairly shy and resent close observation near the nest-hole. This Parakeet, however, prefers natural hollows to any other nesting sites, and in Mitiala I found it nesting invariably in 'Sālédā' (*Boswellia serrata*) trees. In the Gir, also, it was nesting in the same kind of trees as well as in others. The eggs number four to five, and are round and white.

FOOD. Fruit and seeds; also leaves, buds and grain when available. It feeds mostly upon jungle fruits, seeds and shoots. As it is restricted to forest areas and is considerably shyer and less common than the Rose-ringed Parakeet, it does not appear to be a harmful bird and may be useful in spreading seeds of forest trees.



STRIATED SCOPS OWL

Gujerati Name—Liṇṭāvāji Chūggad

Otus brucei HUME

SIZE. Same as that of the Collared Scops Owl.

IDENTIFICATION. This is a miniature Owl, very much like the Indian Scops Owl but much more uniform greyish-white. On the upper-parts, it is finely vermiculated or thinly barred, each feather with dark streaks. Lower-parts, paler but with black stripes prominent on the centre of the breast. Black markings on the sides of the neck are sometimes visible. It is difficult to identify the bird by sight except that it has two horn-like tufts above the eyes. The tail is barred closely except on the central feathers. The eyes are orange-brown or yellow, the beak is ivory-coloured mixed with brown, and the feet are lead-coloured. Measurements: Wing, 150-161 mm.; tail, 78-82 mm.

NOTES. I have collected specimens at Hathab (Gohilwad).

DISTRIBUTION. From Asia Minor through Persia to India, and a straggler in Saurashtra. Rare and non-resident.

FOOD. Insects and small rodents.

INDIAN SCOPS OWL

Gujerati Name—Bhārati Chūggad

Otus scops LINNAEUS

SIZE. Same as that of the last species.

IDENTIFICATION. The various races of the Scops Owl are difficult to identify in the field. The race *sunia* is similar to the Eastern Scops Owl though browner on the upper-parts and more vermiculated. The central streaks, which are sometimes wanting except on the crown, are less in number. Moreover, it has two distinct colour phases: rufous and the ordinary grey. In the former phase, there are no vermiculations on the upper-parts. However, the phases vary considerably. The wing measurements are 136 to 147 mm. in the male and 140 to 154 mm. in the female. In the wing-formula, the fourth primary is the longest and the first primary is short. Two horns on the crown are present.

NOTES. Some specimens collected at Chānch and Kūdā on the Gohilwad sea coast had the wing measurements from 122 to 135 mm. and I suspected that these birds belonged to the darker race *rufipennis* in which the third primary is longest but which has a short first primary like *sunia*.

DISTRIBUTION. Practically throughout India. Local migrant and resident in certain areas. I have not found it breeding in Saurashtra.

FOOD. Same as that of the last species.

EASTERN SCOPS OWL

Gujerati Name—Pardéshi Chūggad

Otus scops pulchellus PALLAS

SIZE. About that of the Myna.

IDENTIFICATION. Upper-parts, dark greyish-brown with vermiculations often suffused with golden-rufous. A rufous and black collar is present. On the upper-parts, each feather has a black streak. Lower-parts, brown and white, mottled and streaked with brown. Tail, barred brown. The head has horn-like aigrettes. Eyes, greenish to golden-yellow. Legs, grey. This bird resembles the race *rufipennis*, but differs generally in having more rufous and golden colour on the upper-parts. Wing measurements: 150 to 164 mm. in the male and 150 to 163 mm. in the female. Tail: 66 to 71 mm. The bird visits fruit orchards and small thickets. It camouflages well in diffused lighting and is difficult to spot.

NOTES. I have collected only one specimen of this bird which was taken from a fruit orchard in my garden in October. It sleeps throughout the daytime and does not attempt to fly away, permitting close approach. It can be caught in a butterfly-net. The call is likened to the tinkling of small brass bells.

DISTRIBUTION. Breeds in Russia, South Western Asia and the Altai Mountains. Winters in the Upper Nile Valley, S.W. Asia and N.W. India, being a straggler in Saurashtra.

FOOD. Insects, mice, etc.

COLLARED SCOPS OWL

Gujerati Name—Déshti Chūggad

Otus bakkamoena PENNANT

See Coloured Plate 21.

SIZE. About that of the Myna but slightly smaller.

IDENTIFICATION. A brown little Owl with two conspicuous horns. Distinguished from other Owlets by the blackish facial disc and its call which is like a *pink-pink*, as if a stone is thrown into a well. The call is also likened to a mournful musical hoot, uttered at intervals. Eyes, brown or yellow. Dark fulvous-brown on breast and upper-parts, finely barred and streaked with black, and a white or buffy-white patch below the throat. Sexes alike.

NOTES. I collected this species in the Gir where it seems to be fairly widespread, and saw a number of specimens. I once saw three specimens come out of a hole in a hollow tree in not a very thick forest. While sitting up for leopards, I have often heard it calling from thick vegetation at various intervals, just after sunset. It prefers close vegetation not far from water, but it may be found away from large trees and thick cover. It is difficult to find as it hides during the day in hollows of which the Gir Forest is full.

DISTRIBUTION. Most parts of India including Gujarat. Uncommon in Saurashtra but resident in the Gir.

NESTING. Season—December to May. Laying in holes in trees.

FOOD. Small rodents, reptiles, bats, and insects.

GREAT HORNED OWL

Gujerati Name—Ghūvad

Bubo bubo bengalensis FRANKLIN

See Coloured Plate 21 and Plate 44.

SIZE. About that of the Pariah Kite.

IDENTIFICATION. This Owl is recognised by its large size, round head and deep orange eyes. On the head, just above the eyes, it has two horn-like tufts or aigrettes; these can be erected and depressed at will. The general impression of the colour of the upper-parts, including the head which is streaked with black, is khaki, mottled with blackish-brown and barred with black on the tail. The lower-parts are rich rufous to buffy-brown with fine pencil markings,

being boldly striped on the breast with jet black. The primaries are chestnut, much like those of a Peafowl, which is helpful in identifying the bird on the wing, though it should not be confused with the smaller Short-eared Owl. The facial disc is prominent, having a black line separating the face from the head. The legs are fairly long and feathered to the toes. The beak is black and curved. The call varies from squeals to hoots, the common one being a loud resounding *hoooooo*. It has other gurgling sounds also, which make it appear sinister and may scare any man in the dark. It also makes another sound like a *tuck-tuck* which coincides with the snapping of the beak. This bird is found amongst boulders in grassy hills and scrub jungle, and on the banks of rivers. It has also been recorded in open grassland and on cliffs on the sea coast. During the day, it rests amongst rocks, in holes, and amidst thick foliage in forested areas, though it always prefers to remain on the ground in open country. Sexes alike.

NOTES. When disturbed, the bird may fly to a dead tree or alight on a rock, and erect its horns and feathers of the head, often giving out a resounding hoot as it squats or bobs up and down. Like all Owls, it prefers seclusion in daytime. It seems to flourish wherever there is plenty of food. I have never heard of or found any predator, bird or animal, preying upon it. When attacked by trained Falcons, however, it falls to the ground and aggressively puffs out its feathers and spreads out its wings to the sides to their full extent; then, while lowering its head, it gives out a tremendous hoot. In this attitude it appears twice as large. When facing the attacker, the wings are opened in reversed fashion, not disclosing the inner side and giving a shield-like appearance, unlike the defensive and bluffing attitude of the Stone Curlew (*Burhinus*) when attacked. If a Hawk or Falcon comes within its range, it lashes out with its sharp talons and, if in close grips, will kill even the largest. Also, it would be an equal match for an Eagle. The male bird is slightly smaller than the female, but it is difficult to identify the sexes in the field. When resting or seated in its normal habitat, such as grass and black rocks, it is completely invisible even at close quarters unless seen against the horizon or perched on a tree. I have often put up Great Horned Owls while out 'chinkara' shooting. In such cases the birds cross into the neighbouring valleys to settle amongst the boulders where they are difficult to find again. Once disturbed, they become wary and keep a good distance. At mid-day, when they are reluctant to fly, I have fired at them with a H.V. rifle from a distance of about 200 yards, missing by a few inches and, to my surprise, without disturbing them. The flight is slow, a flapping one, and rather low over the ground. The tarsal bone of this bird is used as talisman for children by rural people.

DISTRIBUTION. Most parts of India including Kutch and Gujerat and all over Saurashtra. Resident; not uncommon.

NESTING. Season—November to May. Some birds lay as early as October and as late as April or May, but the most likely months for eggs are from December to March. Four white round eggs form the complete clutch. The site is a hole in a bank, or a cavity in rocks, or on the ground under large rocks or in tall grass in the open, depending much upon where the birds live. The nest is a mere scraping. Most of them are found under outcroppings or superimposed rocks in hilly country or forest. Young birds are smoky-brown and, when irritated, emit a *tuck-tuck* while snapping their beaks. In order to draw away approaching danger, the parent birds feign injury of the wing by turning from side to side with their heads down and flapping their wings like a beheaded chicken, squealing at the same time. This ruse can hardly be imagined for a Bird of Prey, yet on account of its ground-nesting habits, it has adopted this successful means of protecting its young.

FOOD. Some ornithologists have said that it often feeds in daytime. However, I have never seen it do so. It is, to my experience, a nocturnal feeder, with us at least. It preys largely upon rats, gerbilles, and mice, but hares and their young, and birds such as Quails, Partridges, Crows, Egrets and Sandgrouse also form part of its diet. Like all Owls, it is considered an ill-omen whenever it is seen, and especially if it sits on one's house. One answer to this belief is that it has probably been formed because of the bird's preference for seclusion and for deserted and dilapidated places, a condition which no man would favour. This old superstition may have arisen from the fact that the bird appears in plague-stricken areas. Its weird, ghostly looks and hideous cries arouse sinister forebodings in the mind of those who have experienced them. Let us not view it in this manner, for the Owl does its duty. As with all other forms of life, Nature has evolved the Owl to serve some useful purpose. Where artificial wild life preservation prevails, it is destructive, but it is of immense value where there is an outbreak of rodents. Some Birds of Prey are adapted to killing and sustaining themselves upon a certain kind of bird or animal life which may be injurious to human interests; so we call these birds beneficial. Similarly, when certain birds live largely upon animals useful to Man, we call them harmful. When they act in both ways, as the majority of them do, we weigh the difference and call them accordingly. In this way, one species of birds may be harmful at one place and beneficial at another. Accordingly this bird can be beneficial or harmful or both: when it preys upon rats and mice, it is definitely beneficial; but when it kills birds and hares which are a source of food to us, it is considered harmful. Wherever there is an increase of harmful rodents, this Owl is of great help, and it should only be destroyed in areas strictly preserved for Small Game. The supply of food is a vital factor in the activities and movements of this Owl. For example, if the natural supply of food like mice, rats, frogs, etc., is not available, or is depleted, it will then have to feed on other types of animal life, or to migrate into areas where that food is

available. This species, being powerful, can feed on a great variety of animals, unlike the Barn Owl, Short-eared Owl, and smaller Owlets which are more usefully adapted to existing upon a certain type of food such as mice and insects and hence are held as wholly beneficial. So the Great Horned Owl can be beneficial as well as harmful, depending upon the conditions prevailing at the time. My studies of this Owl have proved that its chief food is rats and mice and that it does more good than harm, but as I have said before, Game preservation areas should be well protected from their constant attacks which are bound to come on account of food being abundant and easily available there. Repeated killing of Owls may precipitate increase of nocturnal rodents which are harmful to agriculture and village life. And unless one is prepared to control such an increase by artificial means, it is best to let Nature take its own course. Nevertheless, the species may do considerable damage to Small Game if left unchecked. In towns and villages where these Owls appear on houses, they come for the purpose of eating rats, not to bring ill-luck! Paradoxically, however, you may take its appearance as a warning of a possible coming danger, such as the increase of rodent pests which may, in time to come, cause wholesale destruction to humanity by carrying diseases.



DUSKY HORNED OWL

Gujerati Name—Rāḍiyō Ghūvad

Bubo coromandus coromandus LATHAM

SIZE. About that of the Pariah Kite.

IDENTIFICATION. This Owl is very much like the Great Horned Owl but it is much dull in colour, being drab greyish-brown and slightly lighter on the upper-parts. Also, it is mottled on the upper-parts and finely streaked with black on the breast. The beak is greyish with an ivory-white tip to the upper-mandible. Legs, blackish; eyes, light golden-yellow. The tail is barred and tipped white. The tarsus is practically feathered to the toes. By habit, it prefers forested areas next to water. It gives out a cat-like *meow* and utters strange sounds hard to describe. Sexes alike.

NOTES. I once saw five birds in the Victoria Park at Bhavnagar, of which I collected three specimens. The birds attracted me by their strange calls just before sunset. They were in thick scrub jungle next to the lake in the Park.

DISTRIBUTION. Sind, Punjab, Rajasthan and Khandesh to Bengal as resident. Very rare in Saurashtra. I have only come across it once in Bhavnagar.

FOOD. According to the 'Fauna of British India', Vol. V, Page 416, by E. C. Stuart Baker, "their principal food is Crows . . ." but they also eat reptiles, fish, rodents and eggs.

BROWN FISH OWL

Gujerati Name.—Machhimār Ghūvaḍ

Bubo zeylonensis GMELIN

See Coloured Plate 21.

SIZE. About that of the Pariah Kite.

IDENTIFICATION. Very much like the Great Horned Owl in size and appearance but differs considerably in colour and habits. Adult birds appear to be lighter in colour and are more rufous. The main feature of this bird is its legs: the tarsus is not feathered from the knee to the toes. The call is a *ghoom-ghoom* by which it can be distinguished from the Great Horned Owl; it has other calls, too. Another feature is a large white patch on the upper-breast and the absence of the black facial disc-line. The upper-parts are mottled rufous-black, mixed with white; the lower-parts are pale rufous, and faintly barred with brown and streaked with black. The aigrettes or horns are well developed and tipped with black. Beak, strong and dull greenish-yellow; cere, more greenish. Eyes, large, round and golden-yellow. Legs, greyish to greyish-black. Found in forested areas not far from water. Dark brown birds are also seen, and the colour phases vary a good bit, probably depending on age and moult. Sexes alike.

NOTES. This bird is as formidable as the Great Horned Owl, preying upon a variety of wild life of which fish and crabs compose the staple diet. Fully adult birds are slightly larger than the Great Horned Owl but do not appear so impressive. This Owl has the same habit of emitting a snapping noise, *viz.*, *tuck-tuck*, when caught or wounded. In daytime, it keeps to itself in tall thickly foliated trees or hollows. It emits its resounding calls in the late evening before emerging from its daytime haunts. It is seen seated on open branches of tall trees overhanging streams or pools. During Winter and Summer, it may be found by following river-beds, streams and dry nullahs, where the water is drying.

DISTRIBUTION. Throughout India, Gujerat and Saurashtra. Resident. Absent from Kutch. In Saurashtra, it is fairly common in the Gir, Junagadh, and I do not think it occurs elsewhere. In the Gir Forest areas, I found it inhabiting ravines where there was little or no water; but most of the birds keep

to the riverside amongst large trees. Their presence only in the Gir proves that they are typical forest birds.

NESTING. Season—January to April. The birds breed in hollows of large trees which are common in the Gir. Two white eggs are generally laid. I have found fully fledged young in May. I once saw three young, but this might be rare.

FOOD. What I gathered from remains and castings is that it largely feeds upon freshwater crabs, fish and frogs. It also preys upon rodents, reptiles and birds. Snakes and lizards are also within its diet. It keeps in the proximity of drying pools in which freshwater crabs and fish are found. The unfeathered legs indicate adaptation to feed on aquatic life. Drying pools full of small fish provide ample food and an Owl sitting at the edge of one in the early morning or late in the evening during the hot weather is a common sight.

SPOTTED OWLET

Gujerati Name—Chibri

Athene brama TEMMINCK

See Coloured Plate 21.

SIZE. About that of the Myna.

IDENTIFICATION. This miniature Owl is one of our commonest night birds. The upper-parts are mottled, and brown and greyish-white in colour. Lower-parts, dirty white, splashed with brown forming into broad bars. The tail is barred brown and white. The round head appears almost flattened at the crown, and there are no tufts or horns on the head. The nape has white spots, often forming a distinct collar. Legs, feathered to the toes. Beak blackish and tipped creamy-white; eyes, golden-yellow. This little Owlet is found everywhere among habitations, forest areas and cultivation where there are shady trees, holes in banks and such places where it can hide in the daytime. The common call is a reverberating *chirurrrr-chirurrrr-chirurrrr*; it also has a harsh *chevik* or *chivoo* which is usually heard at dusk. It may be heard calling in daytime, too. It also makes short chattering sounds. The flight is undulating with alternate flapping and closing of the wings.

NOTES. The Spotted Owlet is usually recognised by its characteristic bobbing head and body, and also by its squatting and stretching itself up and then taking flight if it is closely approached. During the day it is extremely difficult to make it out in the disruptive light coming through large foliaged trees. It also takes cover under roofs, and spends most of the day in holes in walls or hollow trunks of

trees. A hole under a bridge is one of its favourite sites for rest. In the countryside where the birds are least disturbed, one may come across them during the daytime, in pairs or threes and perched on the thick branches of 'Ficus' trees. They are shy of being constantly observed and will fly to higher branches or seek other cover such as holes, or fly away to another nearby tree rather than remain seated as is usually the case with the Scops Owl. At dusk, however, they come out into the open and alight on vantage points such as lamp posts, telegraph posts, open trees and houses, whence they watch for their prey. This is really a very amusing little Owl and quite harmless, and it does not deserve the bad name it has got among the superstitious. Some birds vary in plumage, being much darker than others. While resting, they often have a habit of blinking, much like other Owls.

DISTRIBUTION. India including Gujerat, Kutch and the whole of Saurashtra. Common and resident.

NESTING. Season—February to April, some birds laying from November onwards. They nest in a hole in walls, or hollows in trunks of trees, or such other cavities in buildings and bridges. Three to four white round eggs are laid. During the mating season, the birds are more noisy and are often heard calling to each other and seen sitting close together in pairs. While one bird incubates, the other often peeps out of the nesting hole.

FOOD. Insects, mice, and sometimes small reptiles. It is an early feeder, coming out just after sunset and hunting throughout the night. It may be seen sitting on wires or lamp posts in order to catch insects attracted by the lights. It is a useful bird, destroying many harmful rodents and insect pests.

LARGE MOTTLED WOOD OWL

Gujerati Name—Girnāri Ghūvad

Strix ocellata grandis KOELZ

See Coloured Plate 21.

SIZE. Larger than the House Crow. About 18½".

IDENTIFICATION. A dark greyish and ferruginous brown Owl with black markings. The wings, tail and upper-parts are black and white with vermiculations gradually forming bars and becoming broader and darker brown towards the tail. Head and neck, black and white, with black tips to the feathers and a rufescent stripe running behind the eyes. There is much grey on the feathers of the head and upper-parts. No horns or aigrettes. Throat, white, but the centre of the throat is feathered chestnut and black with white tips. Lower-

parts, barred black and white and with a golden-buff patch on the breast. Eyes, blackish to orange-brown; eye-lids, orange; beak, black; toes, greenish-brown. The tarsus is feathered to the toes. The facial disc is greyish-black and fairly well-developed with a brown patch running from the eye towards the nape. Primaries, half chestnut and brown, and barred. Sexes alike. This race differs from nominate *ocellata* in being of much larger size; similar in colouration but, on the average, greyer above. Size of black areas on back and nape reduced.

NOTES. The calls are *hu-hooa* and *hoooo*. Prefers thick portions of the forest, not necessarily close to water.

DISTRIBUTION. Resident in Saurashtra, being restricted to the Gir Forest where Dr. Koelz and, subsequently, I collected it. Absent from Kutch. The species is found in Gujerat, and throughout India.

NESTING. Season—December to March. Lays two eggs in hollows of trees.

FOOD. Mostly rodents.

SHORT-EARED OWL

Gujerati Name—Ravāidō

Asio flammeus flammeus PONTOPIDAN

See Coloured Plate 21.

SIZE. Same as the Barn Owl. Larger than the House Crow.

IDENTIFICATION. A brown Owl with black stripes, mixed with dark brown, white and khaki feathers on the back, head and lower-parts. The upper-parts are barred and spotted, giving it a mottled appearance. The birds vary in plumage in having more white or less on the upper-parts. They have two short horn-like tufts above the eyes which are not seen in the field except when erected. The face is round. A black circle round the eyes may be seen at close quarters. The eyes are golden-yellow. The legs are feathered to the toes and comparatively weak. As in all Owls, the flight is slow but silent, and the broad wings enable the bird to soar easily. In flight, the light chestnut wing-quills are conspicuous. Sexes alike.

NOTES. This Owl is migratory, arriving just after the end of the rains or after harvest, and returning to the North about February-March. It is a bird of the open grasslands and fields and is seen in ravines and hills. It rests during the day under a thorny bush or on broken ground, preferring the shade. A favourite resort is that particular long grass which is found in salty marshes, where it takes cover during migration. I have seen it in this stiff long grass, visiting the same

patches year after year. These birds are usually found in parties of about a dozen and rarely does one come across a solitary bird. They do not settle together in a flock but are usually scattered and hidden under some cover. On account of the soaring power of this Owl which excels that of most Birds of Prey, and of its readiness to soar during the day when it is pursued, falconers train the Saker and Peregrine Falcons to catch it, but it is not often that the Falcons meet with success. When mobbed by Crows, it rises in the air and flies out of reach into the sky. This seems to be its best method of escaping from Birds of Prey. Eagles, Falcons, Hawks, and cats, however, prey upon it with eagerness when they get an opportunity. Eagles and Falcons, dropping from above, manage to catch it sometimes. Ground predators kill it while it sleeps for I have often seen remains of these Owls in long grass. When Falcons swoop at it on the ground, the Owl puffs out its feathers and extends its wings in menacing attitude, often emitting a high pitched squeal, *chirrrrr-chirrrrr*. When swooped upon in the air, the Owl often meets the foe by turning a backward sommersault, thus engaging the claws of the Falcon while upside down. This method of defence is commonly used by Birds of Prey when attacked from above. Another method used for escaping from the swoop is by following the tail of the pursuer. The migration route, both coming and going, is the same; these birds come from the North, most of them crossing the Northern and Eastern Saurashtra and returning the same way. They come in small batches across the sea. There is a belief that these Owls cannot see in the daytime, but according to my experience they are far from blind, for not only do they take wing once they are disturbed but they can evade the swiftest swoops from the fastest Falcons even when against the sun. Their power of hearing is good. At daytime, they prefer to sleep but, if disturbed, fly for a short distance, only to resettle further away. While sitting, the feet are not visible and the shape of the bird appears oval. Individuals vary in colour considerably, some being lighter than others. They rarely visit towns and villages but are found in close proximity. For a week, one may see them in a particular area and, then, they are not to be found at all, having migrated elsewhere. I have seen them enter holes in waste land; they invariably take shelter from the sun when it reaches the zenith. Newly arrived birds emit a variety of weird calls after sunset, and a party of such Owls often become noisy as they begin to call at each other.

DISTRIBUTION. Migrating throughout India and into Saurashtra en route Southwards and, then, while returning Northwards. Breeding in Central Europe and Northern Asia. Non-Resident. Regular Winter migrant.

FOOD. Mostly field mice, voles, gerbilles, locusts and beetles. It hunts at night and sleeps during the day. Like the Barn Owl, this is a highly useful

bird. During the post-Monsoon migration, it invariably feeds on locusts, and the castings can be seen all around its roost in the grass. It is, therefore, a true friend of the farmer.

BARN OWL

Gujerati Name—Révi-Dévi

Tyto alba SCOPOLI

See Coloured Plate 21.

SIZE. Larger than the House Crow.

IDENTIFICATION. An oval shaped off-white bird, mixed with grey and cinnamon on the upper-parts and head. The face has a heart-shaped facial disc. The beak is compressed and hooked and whitish in colour. The large round eyes are brownish-black. The breast is white and sometimes spotted with brown. The body-pose is generally upright. The legs are feathered to the toes and the claws are comparatively small. Like most Owls, this is a nocturnal bird, sleeping throughout the day and hiding in hollow tree trunks, thick foliaged trees, dilapidated buildings or forts. It is very seldom seen during the day. Sexes alike.

NOTES. At night, it visits villages and towns in search of food. The call is a screech, *ho-hooooo*, and other weird sounds are also given out. The flight is slow and it looks as if the bird is floating through the air. As in all Owls, the feathers are very soft and flexible, thus affording a silent flight and consequently giving no warning to its prey. During daytime, it enjoys seclusion in holes or amidst thick foliage, but if a bird happens to discover an Owl resting, it gives vent to alarm calls and thus draws the attention of other bird life which have a natural antipathy towards Owls. Birds attracted by these calls join the assembling party which compels the Owl to leave its secluded abode. Crows often make a great noise on sighting an Owl, compelling it to leave its hide-out.

DISTRIBUTION. Most parts of India including Kutch, Gujerat and Saurashtra. Resident. Patchily distributed in Saurashtra but not common. It is one of the most widely distributed birds of the world.

NESTING. There is no special season as it depends much on food, the birds laying from May to October. The nest is either in a hollow tree, or in a hole in a bank or wall, or in a hole in rocks. It lays four to five ivory-coloured eggs; they are oval in shape. The young, when disturbed, make a snapping noise and puff out their feathers. They also emit a loud hiss, much like that of a Cobra or other large snakes.

FOOD. Mostly mice and rats, but insects and reptiles are also eaten. It is a very useful bird to farmers, especially as it rids him of harmful rodents which destroy the crops. There should be no ill omen about this good bird. I remember an Owl perching regularly at night on my roof where I was residing. At first I took it as a bad omen but later, investigating why it had taken its regular perch on the house, I found that rats had made their home under the tiled roof and that the Owl was waiting for its prey and ridding me of the rats. I am sure many houses are infested with rats or mice, and Owls do not come uncalled for, but do so to lessen our burden and to fill their own stomachs. If Owls do alight on your house, first look for harmful rodents. The birds will roost on a high perch in gardens and orchards in order to watch for prey. At night, they usually hoot or screech to scare away the mice which run for safety and thus betray their position, being caught as they move. Owls have remarkably sharp hearing powers and a keen eyesight.

HUME'S NIGHTJAR

Gujerati Name—Pardéshi Chhâpō

Caprimulgus europaeus unwinii HUME

SIZE. Between the Myna and the Pigeon but more slender.

IDENTIFICATION. A greyish-brown bird with a large roundish head, big eyes and extremely small bill which is hardly visible in the field. The eyes are black and kept closed while sleeping in daytime, as this is a completely nocturnal bird. On the upper-parts, it has fawn and buff streaks mixed with black, and these colours match perfectly the ground on which it rests. Most of the tarsus is feathered. The female is distinguished from the male in not having any white on the tail. This bird is normally seen on the ground but is known to alight on branches, walls, etc. As the night falls, it becomes active and starts calling. It utters a quickly repeated *chuk chuk* note, and also a harsh *wak-wak*.

NOTES. I have often seen these Nightjars scattered on dry shingle next to a stream where they had taken cover under thorny 'Talbavali' (*Acacia jaquamonti*) bushes, and were so well-camouflaged that it was difficult to distinguish them from the ground, even from the distance of six feet. I have often flushed them from salty reed marshes. When resting during the day, they are not easily flushed unless almost stepped on. This applies to all Nightjars and, even when disturbed, they do not go far but quickly drop into cover behind a bush or in grass. This is a post-Monsoon migrant departing in March.

DISTRIBUTION. Europe to Persia, Afghanistan, Northern India and Kutch, and migrating into Saurashtra during the Winter season. Non-resident. Uncommon.

FOOD. The birds hunt at night, catching insects on the wing.

INDIAN JUNGLE NIGHTJAR

Gujerati Name—Vana Chhāpō

Caprimulgus indicus LATHAM

SIZE. Same as that of the last.

IDENTIFICATION. Distinguished from other Indian Nightjars by having the tarsus almost wholly feathered, and by its conspicuous call of *tuck-tuck-tuck* continued for a long time, or a *chook-chook-chook*, similar to the rhythmic puffing of a steam engine. Very difficult to distinguish in the field from other species of Nightjars except by its call, but in size it is similar to Franklin's Nightjar, being about 10½ inches. The female has no white spots on the primaries; these are replaced by a rusty-coloured patch. She has mottled tail-feathers without white tips.

NOTES. The birds begin to call after sunset but may be heard occasionally during daytime. They are typical forest birds, often alighting or roosting lengthwise on branches of trees.

DISTRIBUTION. Most parts of India in fairly light forests. Absent from Kutch. In Saurashtra, restricted to the Gir Forest. Resident.

NESTING. The eggs are laid on the ground, and are salmon-pink or reddish-brick in colour, blotched with darker spots and smears.

FOOD. Insects.

SYKES' NIGHTJAR

Gujerati Name—Rétāl-Chhāpō

Caprimulgus mahrattensis SYKES

See Coloured Plate 21.

SIZE. Slightly smaller than the last.

IDENTIFICATION. Much like the Indian Nightjar but smaller and much greyer, with black streaks and buff spots on the upper-parts. It has a rufous

collar. The tarsus is almost naked. The female is distinguished from the male by fulvous spots on the tail. This bird affects sandy waste land rather than jungle, and merges well with the natural grey background where it is almost impossible to spot. This type of soil is often seen in semi-desert and dry mud-flats. The birds are active once they are flushed, and often mount quickly in the sky. But in most cases, as in other Nightjars, they fly some distance and then suddenly drop to earth. They are also found in short grass in open country.

NOTES. Seen on the coastline but not often met with except in Winter. This bird is the most active of all the Nightjars I have seen. Its method of escape from Hawks is to mount rapidly in the sky.

DISTRIBUTION. Breeding from the North-West Frontier Province to Sind and possibly Kutch, and migrating into Saurashtra. Rare.

FOOD. The same as in other Nightjars; nocturnal and feeding on insects.

FRANKLIN'S NIGHTJAR

Gujerati Name—Franklin-nō Chhāpō

Caprimulgus monticola monticola FRANKLIN

SIZE. Between the Myna and the Pigeon but more slender.

IDENTIFICATION. This bird is darker and more rufous than all our Nightjars; it is brighter on the under-wings which can be noticed when in flight. The buff V-shaped design on the shoulders, when seen from the rear, is also a good identification mark. In the male, the outer tail-feathers are white and black-tipped, but mottled throughout in the female. There is a clear rufescent collar, sometimes indistinct, and the crown is marked with fine black arrow-heads. No white moustachial streak. The call is a *chwees*, reminiscent of the Rufous-backed Shrike; it is uttered on the wing or when perched on a tree or some prominence by which it can be easily recognised. It also has an Owl-like call. The tarsus is thickly feathered. This bird keeps to wooded areas and in the vicinity of water though the latter fact does not always hold true.

NOTES. This species readily perches on walls, branches and low stumps from where it emits its characteristic call. During the breeding season, however, it calls frequently while on the wing. At times, it appears to be locally migratory as well as resident with us. The mouth can be opened amazingly wide in order to trap large insects on the wing. The inside of the mouth is a

deep fleshy-pink. Normally, the bird rests on the ground. The eyes, when artificial light falls on them, reveal a reddish glow as is the case with all Nightjars. It is seen on roads at dusk. The flight is quick but not fast, and the bird can glide and turn sharply.

DISTRIBUTION. Practically the whole of India in the better wooded areas. Not uncommon but patchily distributed in parts of Saurashtra where it is resident. I have constantly observed it in Jasdan and on the Shatrunjaya Hill where it breeds. It is found in most of the wooded areas and its occurrence in Bhavnagar has been recorded.

NESTING. Season—March to August. The call is uttered frequently. As with other Nightjars, no nest is made and the eggs are laid on the ground in sparse hilly forest or on the fringes of woodland. The male has a Dove-like courtship display, flying up and gliding down with the wing and tail spread-out, revealing its white feathers clearly, and uttering its rather harsh calls. During the breeding season the bird may be heard calling before sunset and at daytime.

FOOD. Insects, especially nocturnal moths, etc. It seems to be a useful bird. Stomach examinations have revealed grasshoppers, moths, locusts and beetles.

COMMON INDIAN NIGHTJAR

Gujerati Name—Déshti Chhāpō

Caprimulgus asiaticus LATHAM

See Coloured Plate 21 and Plate 44.

SIZE. Smaller than the Franklin's and Hume's Nightjars. About that of the Myna.

IDENTIFICATION. A greyish-brown bird with a large head, large black eyes and small bill and legs. Top of head, streaked with black. Upper-parts, grey mixed with black and buff stripes. There is a buffy-white streak running from the bill towards the nape. Throat, white; rest of under-parts, brownish-grey with a rufous-white moustachial streak and sometimes with a rufous collar. Best identified by its call: *chuck-chuck-chuckerrrrr*. As in most Nightjars, the white spots forming a patch on the wings may be seen in flight.

NOTES. Nightjars have long bristles, or hairs, on each side of the small bill. These are found in many other birds and are especially developed in those which catch their prey in the air at fairly fast speed, so as to prevent insects which are caught from escaping. In colouration and design, this Nightjar is one of the best examples of camouflage in Nature. During the day it is seen resting on the ground amongst fallen leaves under shady bushes, hedges, or on open stony

ground. It is one of our commonest birds and can be heard at dusk and at night calling *chuck-chuck-chuck-chuckrrrrr*, which sounds like a Ping-Pong ball being slowly bounced or trapped. Another call heard in the breeding season is a *ba-ba-ba* which can be simulated by drawing the lips together and releasing them quickly, thereby giving out a bubbling sound. While displaying in the air, the male flies keeping his wings in V-shape. It is often seen on roads after sunset; in the head-lights of a car, the eyes shine a reddish colour. It also occasionally sits on walls or flat railings. The body-pose is horizontal. The bird is found in scrub jungle, open country and stony ground. It is also seen in shady places in 'wādis', under hedges and in secluded areas in gardens. It always selects places where it is seldom disturbed during the day and where it merges with the ground. It is slow on the wing, having a flapping and gliding flight. It is often seen zigzagging and then suddenly dropping to the ground. The wings have white patches which readily identify it while in flight. The rounded wings enable it to soar in the same manner as Rollers and Hoopoes, and some falconers train the little 'Tū-rūmti' to catch the bird. During the day it is not easily found, but in the evening one can see it frequently. At daytime, it can be approached closely and caught with the hand, but once flushed, it becomes alert and wary. Like all Nightjars, these birds are nocturnal. And yet I have heard them calling at daytime.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common.

NESTING. Season—March to October. The season varies and the birds lay at all times of the year, but I think they lay most from March to August. No nest is made; the site may be in wooded areas as well as in absolutely open ground. Two eggs of a pinkish or salmon-pink colour are laid, and the parent bird sits very tight, not moving until almost stepped on. During the day, normally the eyes are kept closed, but on the slightest noise they are opened, often slightly, and the bird becomes alert. Those flushed from their nests often become suspicious, and I have heard them emit a peculiar short call, viz., *pūk*. When returning to the nest, they alight a few feet away and then advance with wobbling gait to cover the eggs. Incubating birds keep their eyelids slightly open, thus concealing their large eyes which betray them at close quarters. During the rainy season, stony ground is preferred for nesting. Normally, a bird on its eggs will allow close approach and it may even be touched, but once it has been flushed, it soon becomes wary.

FOOD. Insects taken in the late evening and at night. The birds may be seen hawking close to a road and settling on it at dusk. They often follow the head-lights of motor cars to catch flying insects attracted by the glow and are sometimes killed by collision while attempting to rise from the road.

KASHMIR ROLLER

Gujerati Name—Kāshmiri Neelkanth

Coracias garrulus semenowi LOUDON AND TSCHUDI

See Coloured Plate 13.

SIZE. About that of the Pigeon.

IDENTIFICATION. A pale bird with a yellowish-brown or clay coloured back and a pale greenish-blue body. When in flight, the wings display blackish-brown flight-feathers. It has a short, strong bill, and short legs. Bill, dark-brown; legs, yellowish-brown. It is distinguished from the Indian Roller by its paler colouration and slimmer build, lacking the rich brick-red breast of the latter. The call is a *tuck-tuck*, though usually the bird is silent. It also has a harsh call, a *khurrr*, which is emitted in anger or in fright. Sexes alike.

NOTES. The birds are seen from August to September when they arrive from the North and the East into Saurashtra (See Migration Map 6) and then spread-out into the country throughout the Winter months. One of the migration routes is across the Gulf of Cambay and the birds may be seen coming one by one, flying westwards over Bhavnagar. At this time, they are seen in large numbers all over the countryside, often in single file but not in flocks. During Winter they become less common, and by March they return eastwards to their homeland. They are common birds, visiting gardens, habitations and fields, and are often seen sitting on telegraph posts and trees. In flight, the bird is graceful, having a slow flapping wing-beat, and it seems as if it is floating in the air. The broad wings enable it to soar up into the sky with ease in spiral flights. This can be seen at its best when chased by small Falcons. But it is rarely caught by Hawks. The trained Falcons find this bird more difficult to catch than the Indian Roller.

DISTRIBUTION. Breeding in Kashmir and migrating southwards through Kutch and Gujerat from the end of July. Seen throughout Saurashtra after the rains have broken and during the Autumn months. Non-resident.

FOOD. Beetles, grasshoppers and other insects; sometimes frogs, toads, mice and worms. Much of its food is taken from the ground, but certain insects are captured high up in the sky. It has a habit of cocking its head sideways to look up into the sky. It selects a perch such as a tree, a telegraph wire, a pole or a small bush from where to watch out for prey. Most of its hunting is done at mid-day. This bird must be of enormous help to agriculturists as it feeds on a multitude of insects at a time when they are abundant.

INDIAN ROLLER

Gujerati Name—Désli Neelkanth

Coracias benghalensis benghalensis LINNAEUS

See Coloured Plate 13.

SIZE. About that of the Pigeon.

IDENTIFICATION. Distinguished from the Kashmir Roller in being slightly larger. Brick-red on the breast and head with pale streaks on the breast, but the crown is bluish-brown. It lacks the uniform pale sea-blue colour found on the head, breast and lower-parts of the Kashmir Roller, and it is on the whole richer in colouration. This is evident by its brighter colours on the wings which are darker purple-blue and brighter sea-green. The legs are short and the bill is strong and black. The eyes are dark and large. Its habits are exactly the same as those of the last species. The flight is a slow flapping accompanied by a glide. It emits a *tuck* and also a harsh *kurr* which are heard occasionally. The tail is not long though brightly coloured; the bird has a habit of moving it up and down. Sexes alike.

NOTES. This bird is found in gardens, cultivation and forested areas. It is often seen perched on some high prominence, watching out for its food and looking frequently up into the sky. On spying some food on the ground, it immediately glides down to pick up a beetle or insect of some kind and then returns to the same perch. This action is frequently observed in the field. At mid-day, it may suddenly ascend almost vertically into the sky, either in spirals or straight up, and catch a flying insect in mid-air, and then shoot downwards to its perch. It may be commonly seen at times; at other times it is difficult to be found. The Rollers that have established their territory do not vacate it for some time. They are pugnacious birds, always preferring to remain solitary, and driving away others from their regular perch or feeding ground except during the breeding season. During the migration of the Kashmir Roller, these resident Rollers are comparatively scarce, but this is the only species that is seen during the hot Summer months, and even then it is uncommon or rarely seen. Most of the birds are met with during the rains and the Winter months; they may be seen perched on telegraph posts along the railway lines. Owing to their rounded wings, they are capable of soaring to great heights. This propensity in the Roller affords falconers an opportunity to train the Red-headed Merlin, or 'Tūrūmti', to chase these birds, and excellent 'ringing' flights can thus be seen, the birds often disappearing completely from view. The Roller, however, is seldom caught except with a well trained pair of Merlins. While Hawks rarely catch the birds, I have picked up their remains under the eyries of the Greater Spotted and Bonelli's Eagles. They must have been taken by the Eagles from above for, time and again, I have seen the Lager Falcons failing to capture them. They are seldom

attacked except by a fast swoop, and attempts to out-climb them always end in failure. However, I have seen the bird taking immediate refuge in a tree when chased by a Peregrine Falcon. It is not an active bird and is usually seen seated on a perch; it is not at all shy, allowing fairly close approach.

DISTRIBUTION. Most parts of India including Kutch, Gujerat and Saurashtra. Resident in certain districts only. Prone to local movements.

NESTING. Season—April to August. I have seen the birds nesting in Bhavnagar and Junagadh in the Gir, and they may nest in other parts of Saurashtra sparingly. They are nowhere common breeders. Hollows in trees are favourite sites. Three to four eggs make the normal clutch. They are shiny white ovals. The courtship display is elegant; the birds fly up in the air and then take a sommersault. When perched and courting, they stretch themselves out, raising their head and bill upwards and partly spreading the tail. During the breeding season they become rather noisy and I have often seen the male feeding the female. At the nest-hole, they attempt to attack intruders, always keeping a vigilant lookout for likely enemies.

FOOD. Insects, beetles, grasshoppers, toads, mice, and other miscellaneous food. The Indian Roller seems to be a beneficial bird. Insects are caught on the ground and in the air, the bird returning to its perch almost immediately. It is no doubt a friend of the farmer.

INDIAN PIED KINGFISHER

Gujerati Name—Kābarō Kalkaliyō

Ceryle rudis leucomelanura REICHENBACK

See Coloured Plate 22.

SIZE. Between the Myna and the Pigeon.

IDENTIFICATION. A black and white speckled bird with a long, strong black bill. It has short legs which can hardly be seen. It is always found near water, perched on some branch or prominence on the bank. It is also commonly seen hovering over water or diving vertically into it with a splash, and out again with its catch, usually a small fish. It emits a harsh call *kil-kil-kil-kil*, *ki-kil* and also a *kitch*. The head is mottled black and white. The wings are closely barred and spotted. The breast has a black band and other half bands and spots. The tail is short. There is a considerable amount of black near the eyes. The bird is commonly seen on lakes, rivers and large pools. It is not very shy and can be observed at fairly close quarters. It does not usually enter gardens and small ponds but prefers larger expanses of water such as lakes, rivers, and sea coast. Sexes alike.

NOTES. Like most Kingfishers, these birds hover over water and, on seeing a fish, dive into it. This performance is repeated for hours together. The flight is straight and sometimes undulating. Another method of fishing is to sit and watch from a bridge, dam or high bank, and then suddenly to dive straight into the water for the fish. The birds are at times rather noisy, often fighting each other for better fishing waters, and yet they are seen frequently in pairs or family parties. They keep to well-watered areas. A bird may be seen dipping in and out of water, taking a bath.

DISTRIBUTION. The whole of India and Saurashtra. Resident. Fairly common.

NESTING. Season—October to April. The nest is excavated in banks of rivers, pools or lakes, and always close to water. It is a hole of a fairly large size. The birds often breed near the same site each year. White patches near a hole disclose where they are nesting. Four to six white round eggs of glossy texture are laid. The nest-chamber is often strewn with fish bones.

FOOD. Mostly fish from 1 to 4 inches in size. The birds are either seen sitting on high vantage points or, more commonly, hovering over water near banks of rivers or shores of lakes. They always hover against the wind, and continual failure to catch fish does not disappoint them for they will go on fishing until the evening and often until after dark. It is interesting to watch them sometimes descending and stopping half way and then suddenly dropping into the water with closed wings in their attempt to catch fish. The oily gland above the tail is used to keep their feathers fresh and dry; birds like these are always well oiled to prevent water affecting them. The feathers are also elastic so that, while diving, they tend to bend instead of break. It is amazing how the birds can dive from a height of 20 feet or more into shallow water without injuring themselves.

COMMON KINGFISHER

Gujerati Name—Lagoṭhi

Alcedo atthis LINNAEUS

See Coloured Plate 22.

SIZE. Slightly larger than the House Sparrow.

IDENTIFICATION. This is the smallest of our three Kingfishers. It is a squat blue-green and orange-brown bird with a long blackish bill and short orange-red legs. When seen in the sun, the upper-parts look dark blue to bright greenish-blue. Whole breast and lower portion, rich orange-brown. In young birds the lower-mandible is yellowish. There is a white streak just near the eyes.

Young birds are duller and darker. This little Kingfisher is seen on small streams, lakes, rivers and pools. It is not as common as its name implies though frequently seen during the Winter. The birds are seen singly or in pairs, and seldom move together unless accompanied by fledglings. They generally frequent streams in forest as well as in open country, preferring water with low banks. The flight is fast and straight, and a typical scene is to see a bird flying low along the surface of water, winding its way rapidly along a stream or river or perched close to the bank on some prominence. The back has a conspicuous patch of iridescent blue. Sexes alike.

NOTES. The birds adopt these methods while fishing: (1) hovering and then diving perpendicularly into the water, or (2) diving at an angle from a bank or perch. The wing-beats are very rapid, reminiscent of the Sunbirds. They have a habit of bobbing their heads up and down, at the same time emitting a sharp whistle. They are often overlooked as they sit on a bank or stone. As they are inclined to be a little shy, they dart rapidly away on the approach of Man. They prefer a certain amount of solitude.

DISTRIBUTION. The whole of India and Saurashtra. Resident and Winter migrant. As regards its breeding area, the bird has a patchy distribution in Saurashtra, nesting in some areas while absent from others. The easy availability of food seems to be an important factor. It is resident in the Gir and along perennial streams and rivers.

NESTING. Season—March to June. It nests in holes in banks of streams and large rivers. Some nests that I found were far away from water; one was in an old well, and another in a small pit some distance from a stream. The nest-hole is about 3 to 6 feet deep with an egg chamber usually lined with fish bones. The passage is horizontal and rarely goes downwards. One unusual nest-hole that I found was winding into rather a stony ground and going downwards; this was at the bottom of a cave on the edge of a pool in the Gir Forest. The bird generally nests in less inhabited areas. The eggs number five to eight, and are round and glossy. It takes some time to find a nest unless it contains the young, in which case one can watch the parent birds take fish in their bill to feed them.

FOOD. Small fish, but comparatively large for the size of the bird. It is caught and smacked on a stone or prominence, straightened, thrown up or manipulated in the bill and swallowed head first. If it be a small fish, it is often gulped straight down.

WHITE-BREASTED KINGFISHER

Gujerati Name—Kalkaliyō

Halcyon smyrnensis LINNAEUS

See Coloured Plate 22.

SIZE. About that of the Myna.

IDENTIFICATION. Wings, black; tail, bright blue-green. Head, neck and lower-plumage, chocolate or dark reddish-maroon, with the exception of the throat and breast which are pure white. The rounded wings have a conspicuous patch of white on them. The long bill varies from deep to almost coral-red. Eyes, brown; feet, red. This bird is fairly common and is much tamer than the last two species mentioned. It readily enters gardens and may be seen on ponds and wells. It frequently perches on trees and is found in forests. Quite unlike most Kingfishers, it may be found some distance away from water. In fact, it shuns extensive lakes and rivers, preferring wells, streams and small pools, but it is seen along the sea coast. It has two or three kinds of calls, a *killy-killy-killy-killy*, and a *khall-khall khall-khall* which is more of a rolling sound, and a sharp whistle; also it has quite a harsh call which is emitted in anger. Sexes alike.

NOTES. As with all Kingfishers, this bird does not like others of its kind encroaching upon its feeding grounds. While feeding, it rarely, if at all, hovers, and the flight is more undulating than with most Kingfishers. It is commonly seen on the sea coast perched on cliffs, rocks or banks. On the coast, it is often preyed upon by Peregrine Falcons and Tiercels during the Autumn and Winter months. The birds seem to enjoy dipping in and out of water and then sunning and preening themselves but this is in no way peculiar to this species.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common.

NESTING. Season—March to June, but most eggs are laid in April and May. The nest-site can be a cavity in a well, or a hole in the bank near or away from water. The birds building in banks excavate with their bills. Banks on the roadside are often preferred for nesting, and often the same banks are used year after year. The entrance hole is about 3" to 4" wide and about 5' deep and is horizontal or on a slight incline. Five eggs make the usual clutch, but more are sometimes laid. They are round and white, becoming darkish blue or grey as incubation advances. In some nests, nesting material is used but most nests have nothing.

FOOD. More of an insect-eating bird than generally imagined. It will take grasshoppers, beetles, and other terrestrial insects as well as fish, water-beetles, mice, frogs and lizards. On the coast, I have seen it feeding on mud-gobies,

crustacea and insect life. Its hunting methods somewhat resemble those of the Roller, for it sits perched and waits for some insect to move and then glides down to the ground to pick it up, immediately returning to its perch. It does not normally hover while hunting like the other two Kingfishers but plays a waiting game.

EUROPEAN BEE-EATER

Gujerati Name—Vilāyati Patraṅgiyō

Merops apiaster LINNAEUS

See Coloured Plate 19.

SIZE. About that of the Bulbul.

IDENTIFICATION. Forehead, white and with a blue-green supercilium; crown, nape to upper-back and side of neck, chestnut; back, creamy-yellow, golden in bright sunlight; tail, greenish-blue, with central tail-feathers tipped black and longer than the rest of the tail by almost an inch. Bill, black; eyes, red and with a broad black eye-streak. Chin and throat, bright yellow and with a black band at the base of the throat. Lower-parts, bright bluish-green to indigo. Wings, bluish-green and chestnut-brown and with black tips. Legs, brownish-grey. Sexes alike.

NOTES. This bird, like the typical Blue-cheeked Bee-Eater, prefers the vicinity of water where it is seen hawking for insects. The golden back is its outstanding field-identification. I have only one record of its occurrence in Saurashtra, a specimen having been collected by me from the Gaurishanker Lake at Bhavnagar.

DISTRIBUTION. Southern Europe to Kashmir, South to Northern India as far down as the Bombay Presidency. Breeding from Europe to the Himalayas but migratory elsewhere in Winter. A straggler in Saurashtra.

FOOD. Insects taken on the wing in the same manner as the Blue-cheeked Bee-Eater. In its feeding habits, it seems to perch more frequently than the Blue-cheeked species.

GREEN BEE-EATER

Gujerati Name—Nānō Patraṅgiyō

Merops orientalis orientalis LATHAM

See Coloured Plate 22.

SIZE. About that of the Sparrow.

IDENTIFICATION. A small green bird of slender shape with a thin, longish and curved bill, and a moderately long tail with two extra long thin feathers extending beyond the main tail-feathers. When seen at close quarters, the cheeks appear bluish-green with a black stripe or chin strap on the lower-throat which is absent in young birds. Top of head and forehead, rusty-red. It also has a black streak across the eye. Bill, black; legs, flesh-coloured to grey; eyes, red. The legs are very short and hardly visible when the bird is perched. Green Bee-Eaters are commonly seen either in large flocks, sometimes over 500 birds, or in pairs during the breeding season. Small groups may be seen at any time of the year. They are very active and graceful on the wing, flying skywards, swooping down to catch flying insects, and then returning quickly to their perches. Commonly seen perched on telegraph wires, or on tall trees, or on slender branches close to the ground. The call is something like a *prit-prit*, uttered quickly, and it is reminiscent of jingling of bells or the song of a cricket. The body-pose, when perched, is very upright. The birds are not at all shy and allow fairly close approach. Sexes alike.

NOTES. These birds roost in evergreen or foliated trees just after sunset as it begins to get dark, the Cork tree (*Mellingtonia hortensis*) being one of the favourites. During the cold months, hundreds of birds congregate, and they may be seen throughout the countryside. Great numbers are attracted by trees in water on large lakes among which they roost. They have a habit of alighting on roads to take dust-baths. On the ground, they move clumsily.

DISTRIBUTION. The whole of India and Saurashtra. Resident and common.

NESTING. Season—April to July, most birds laying in April and May. The nests are excavated by the parents which bore holes in banks or in the ground. On the west coast, they breed in small colonies in soft sand. The entrance hole is almost $1\frac{1}{2}$ " wide, and the tunnel goes as deep as 8 feet, ending in a small nest-chamber. These birds seem to breed all over Saurashtra, in pairs or in small colonies. A pair may nest either quite solitarily or not very far from others. They nest close to roads where soft earth and banks are available. Many of the nests are out of reach whereas the rest are low or actually on the ground. One particular nest I discovered at Mahuva (Gohilwad) was on the ground in a small pit half-a-foot deep. More surprisingly, when I was excavating the nest-hole, a toad was pulled out from it; it was not blocking the hole but

had its own bed-chamber a few inches on the side in which it had been sleeping while almost another foot away the young Bee-Eaters were found. Old dilapidated wells are used if they are in soft soil. The entrance holes on river banks are much more symmetrical. The birds excavate their nest-holes with their sharp bill, and then with a rapid beat of the legs expel the sand behind them. Three to six white round eggs are laid. Both parents feed the young which soon learn to come to the entrance to be fed. They move backwards fairly fast when disturbed. The fledglings can be distinguished from adult birds by the absence of the black throat strap and by duller plumage.

FOOD. Mostly butterflies, moths, bees and other insects. When a Bee-Eater misses its target, say a flying insect, the snapping of its mandibles is clearly audible. However, the birds are very quick on the wing and it is rarely that they miss their swoop. They are often seen to climb up to catch flying insects, mostly during the afternoon. The effortless way in which they feed is interesting to watch. The birds sometimes attempt to flush their quarry but usually wait for the insects to rise. Although harmful to owners of apiaries, they seem to destroy a large amount of insect pests.



BLUE-CHEEKED BEE-EATER

Gujerati Name—Motō Patrangiyō

Merops superciliosus persicus PALLAS

See Coloured Plate 22.

SIZE. About that of the Bulbul.

IDENTIFICATION. A much larger bird than the common Green Bee-Eater. It is green with bluish-green on the cheek and rump. A white chalky moustachial stripe on the face next to the cheek is visible with a prominent black eye-stripe. The forehead, during the breeding season, is chalky-white. It has a small chestnut patch on the upper-breast but the chin is bright yellow. The tail has two long feathers. The curved but fairly long bill is black, and the round beady eyes appear black from a distance but actually they are bright red except in the young. Young birds are paler and more greenish-yellow, assuming a bluish tinge on the tail and rump during Winter. This species is not as common as the Green Bee-Eater but is seen abundantly from August to October. It has a graceful flight which is fairly rapid. These birds are seen near forests and lakesides and also on the sea coast where they sometimes breed. They are never very common inland. The wing measurements of over 140 mm. distinguish this bird from the Blue-tailed Bee-Eater. Moreover, the Blue-tailed

is not so brightly coloured, is smaller and has an all blue tail. Young birds often migrate together, and have a less audible call. Sexes alike.

NOTES. Blue-checked Bee-Eaters arrive on our sea coast about April-May, and in June-July they have already begun to excavate nest-holes in the cliffs, sand dunes and high tidal banks. Some nest isolated in the cliffs while others breed in scattered colonies, visiting the same area year after year. The migration appears to come from east to west and then from north to south but confirmation has still to be made. Like the Green Bee-Eater, this bird takes its food on the wing; the Green Bee-Eater may be seen sometimes collecting food from the ground but I have rarely seen the Blue-checked taking food off the ground except by swooping. It is often seen sitting on sand dunes and rocks on the seashore, but prefers perching on trees. It generally roosts in thorny trees close to water as well as those partly submerged in lakes or on the sides of them. It is frequently seen near water and bare open hills on lakesides. The birds congregate between the months of September and December. The call is a mellow *kreet-kreet* which is louder than that of the smaller species.

DISTRIBUTION. Breeding from Persia to Western India, and a passing migrant in other parts of the country. In Saurashtra, it breeds regularly in certain areas only but it is found all over the Peninsula.

NESTING. Season—June to August. Breeding in small colonies and pairs. Holes are excavated in banks and sand dunes, their tunnels going as deep as 10 to 20 feet; the entrance hole is about 2" wide. Rows of streaks like miniature tramway lines at the entrance hole reveal that the birds are nesting; these are made by the feet. The tunnels are not easy to excavate, and a good day's labour can often be spent trying to reach the nest-chamber. Three to five white round eggs are laid in a fairly roomy nest. The young have a marvellous aptitude for running backwards in their nest-tunnels. The birds are very wary while nesting, never approaching the nest while it is under observation. The parents feed their young on insects caught on the wing over land or right out to sea, and this they do with much grace which is reminiscent of the Peregrine Falcon taking the Quail. This Bee-Eater is one of the most interesting birds to watch in flight. I consider it to be one of our most graceful fliers.

FOOD. Insects, generally taken on the wing and rarely on the ground. The birds are rapid fliers, beating their wings and gliding, also soaring and diving swiftly down upon their prey, even over water. They are useful birds, destroying winged insect pests.

HOPOE

Gujerati Name—Hūd-Hūd or Ghaṇṭi Tāṇkṇō

Upupa epops LINNAEUS

See Coloured Plate 22.

SIZE. About that of the Myna.

IDENTIFICATION. A fulvous to buffy-pink coloured bird with the upper-parts striped black and white. It has a thin crest which is erected like a fan, the tips of the feathers being black. Also, it has a long curved bill which is blackish. Eyes, small and black. Legs, short but well-adapted for walking. The tail is not very long and is black with a white central bar. The flight is undulating and slow. While walking or perched, the bird keeps an erect head and chest pose. The short legs make it stand like a Dove. It is fairly common from August onwards upto March and throughout the cold season. It is seen everywhere, especially on dusty roads and open spaces. It walks along probing its long curved bill into the dust or earth, picking up food; it always seems to walk as if it was in a hurry, its head moving from side to side. Although silent, it is not a shy bird, often coming quite close if one is sitting still. Sexes alike.

NOTES. Half-a-dozen birds or more may be seen together taking dust baths on the roads. When alarmed, they immediately erect their crests, especially if they have just alighted. They have short wings which are well-adapted for soaring flights and which enable them to escape from enemies such as Falcons. If they get a chance to rise a few feet into the air, they can then out-climb Falcons with ease. The conspicuous colouration is almost a warning or a challenge to Birds of Prey. On account of the sport this bird affords, falconers train Red-headed Merlins, or 'Tūrūmtis', to chase the Hoopoe, and excellent 'ringing' flights are then seen which provide great excitement. These birds soar up only if hard pressed by Birds of Prey; otherwise the usual flight is undulating and just above the ground. They may be seen migrating in small batches. Occasionally one may hear their call from which they get the Indian name of 'Hūd-Hūd'.

DISTRIBUTION. Throughout Europe and most parts of Asia. One subspecies breeds in Kashmir, another in Ceylon and Travancore. Hoopoes migrate southwards, and I have recorded their arriving in Saurashtra as early as the end of July and remaining with us as late as the end of May. They are common and found all over Saurashtra during the Winter months. Non-resident. Most birds begin to arrive about the end of August and depart in April. At times one may see a stream of these birds migrating.

FOOD. Insects from the ground. While feeding, they give an appearance of a mechanical toy, the head jerking from side to side and the short legs moving

quickly; they circle, pause for a moment and then continue their feeding. Green patches of lawn and sides of lakes and rivers where the water has receded and where the green grass has sprouted are their favourite feeding grounds.

COMMON GREY HORNBILL

Gujerati Name—Chilotro

Tockus birostris SCOPOLI

See Coloured Plate 20.

SIZE. That of the Pariah Kite.

IDENTIFICATION. A large ash-grey coloured bird with a thick, long and curved bill, and a compressed horn-like protuberance on the mandible known as the casque. It has a long tail. The eyes of the male are reddish, and those of the female brown. The bill is brownish-black with the casque blackish and ivory-white. It has a fairly long wing-spread, and the extended long neck when the bird flies produces a grotesque effect. The flight is heavy and consists of alternate flaps and glides. A swishing or humming sound of the wings while flying gives away its presence. It has a call very much like the whistle of the Common Kite. It keeps an upright body-pose. It is found amongst large foliaged trees such as the Banyan, and the Pipal (*Ficus*) where it climbs up the branches to feed on fruit. It always prefers perching on the topmost branches of large trees growing in valleys. During Winter, these birds are found in groups of ten to twelve, and they may be seen flying in single file from tree to tree. They are shy birds and prefer seclusion.

NOTES. On account of the general belief that the feathers of these birds are of medicinal value, many are killed. The birds breeding in large trees were often destroyed in forest coupes. So the species is now believed to be extinct with us. It should be protected and preserved, and the common belief that the feathers are useful should be eradicated. It is really a grand bird, the nesting habits of which are unique and provide an excellent example of conjugal love. It is a forest dweller, but in areas where it is common, it often visits mango orchards and gardens. When approached, Common Grey Hornbills become very alert and remain motionless; they are difficult to see from under a tree as they sit on the very topmost branches. Old forest men of the Gir say that once these birds were not uncommon and that they were seen regularly throughout the year and were fairly plentiful during the Winter months. I remember seeing them until 1936. The last report of a bird was in 1950 in the Kunki block of the Gir Forest.

DISTRIBUTION. Wooded areas of Western India and Gujerat. Now believed to be extinct in Saurashtra; found only in the Gir Forest where it was resident. Absent in Kutch.

NESTING. Season—April to August. It nests in hollows of large trees in secluded valleys. When the female has laid two to three white eggs, she sits in the cavity and then plasters herself with excreta and mud, leaving only a small entrance for her bill. The male assiduously feeds his wife during the incubation period. The female, while incarcerated, undergoes her moult. When the eggs hatch, she breaks open the plaster, and both parents commence to feed the young. The plastering affords protection against cats and other predators, and Man is perhaps the only enemy who destroys this bird mercilessly.

FOOD. Mainly forest fruits, especially those of the *Ficus* and *Eugenia* type, but rodents and reptiles such as rats and lizards are also eaten.

ALPINE SWIFT

Gujerati Name—Pahādi Abābilō

Apus melba LINNAEUS

See Coloured Plate 22.

SIZE. About that of the Bulbul.

IDENTIFICATION. Recognised by its large size, the dark brown band on the breast dividing the white under-parts, and the bow-like shape of the wings when flying. There is no white rump patch. Upper-parts, grey with an olive sheen when seen at close quarters. The feathers of the upper-parts, from the head to the upper tail-coverts and also the vent, have white edges. The tail is slightly forked. Total length, about 8"; tibia, feathered upto tarsus; lower-tarsus, unfeathered. Claws, black and curved. This Swift is normally seen in flocks and occasionally in pairs, flying with amazing speed and zooming down to rise again and disappear out of sight. Sexes alike.

NOTES. I have seen these birds near Palitana and on the Shatrunjaya Hill as well as on the Shatrunji River. Sight records at Hingolghadh and at Jasdan have been made by the Yuvaraj of Jasdan. The birds prefer the vicinity of high hills and steep crags on mountain sides.

DISTRIBUTION. From Southern Europe to the Himalayas and throughout India. Uncommon in Saurashtra. It is likely that some pairs breed on the Girnar and the Shatrunjaya Hill.

FOOD. Insects taken on the wing. It is a magnificent flier, diving perpendicularly at times with terrific speed while on the feed, and then rapidly disappearing out of sight.

INDIAN HOUSE SWIFT

Gujerati Name—Abābilō

Apus affinis affinis J. E. GRAY

See Coloured Plate 22.

SIZE. Slightly smaller than the House Sparrow.

IDENTIFICATION. A blackish-brown bird with long, slim wings and a short tail. Upper-parts from head, blackish-brown; lower-parts, chocolate-brown to dark brown. A conspicuous white patch on the rump. Chin, white; eyes, black.

NOTES. The feet are very small and the claws point forwards so that the bird can only cling on to vertical surfaces. A bird which has dropped to the ground can neither walk nor fly. The Swift, as its name implies, is a very rapid flier and is seen on the wing usually in flocks or in pairs. Flocks of 20 to 200 soar quite high in the sky where they hawk, especially in early mornings and late evenings, by diving and turning with amazing speed. They then appear like black butterflies. These Swifts are found in cities and in the countryside and all along the sea coast, wherever there are cliffs and crags. They frequently emit a short sharp call, *chirr*. In cities, they are seen entering houses, lofts, temples, etc., in close contact with human habitation. They are usually seen on the wing, and are often in playful mood, rising up in small flocks towards the sky in a ball-like mass.

DISTRIBUTION. Throughout Central India, Gujerat, Kutch and the whole of Saurashtra. Resident and common.

NESTING. Season—May to October; but odd nests are built at any time. The nest is made of mud and soft feathers, with the birds' own saliva used as cement. They breed in colony or in single pairs, and their half-a-cup-like mud and feather nests are plastered on to walls inside houses, porches, temples and caves. One unusual site for a nest in my house was a wooden nest-box in which Sparrows had bred; this nest had no mud-lining, but the eggs were laid on the feather-bed of the old Sparrows' nest inside the nest-box. The eggs number two and are white and longish. I have seen the birds copulating in mid-air.

FOOD. Insects taken on the wing, such as mosquitoes, flies, etc. This is a useful bird.

WESTERN PALM SWIFT

Gujerati Name—Tād Abābilō

Cypsiurus parvus balasiensis J. E. GRAY

See Coloured Plate 22.

SIZE. Much smaller than the Sparrow.

IDENTIFICATION. A very small Swift with a forked tail. Upper-parts, brown; lower-parts, smoky-grey. It is recognised by its forked tail and high pitched call, which is a musical squeak of two syllables like that of a rubber toy. This Swift is a bird of more humid areas and cooler climates of the plains. It is not uncommon on the sea coast, and is seen in pairs or small groups. It is very active and swift in flight, and has a marvellous capacity for turning in the air. I have never found it abundant anywhere. While flying, the tail appears longish in comparison with the body, and the wings are slim and pointed. It changes its course frequently. It is shyer than the Common Indian House Swift, preferring seclusion.

NOTES. This Swift is found wherever the palms of the 'Tād' (*Borassus*) species occur, except of course in the driest and hottest areas. So much is it attached to this palm species that I noticed it at Gopnath (Gohilwad) on the sea coast where there were only two palm trees standing, and in one of them a pair was breeding. Nowhere in the vicinity did I see any other palms nor any more Swifts.

DISTRIBUTION. Not uncommon in most parts of Western India where the climate is not too hot. Resident. It has rather a patchy distribution in Saurashtra and is found much more on the coastal belt where there are palm trees.

NESTING. Season—May to September. The nests are plastered on to the undersides of palm leaves; it has a predilection for the Palmyra palm (*Borassus flabellifer*) on which it invariably nests. The nest is a very small one, purse-like, and made of saliva, feathers and grass. Two to three pointed white eggs are laid. I have seen a few pairs nesting together on the same tree on which Vultures were nesting. It is remarkable how the nests can stand up against strong winds inspite of the leaves of the palms swaying continuously.

FOOD. Minute insects, e.g., mosquitoes, flies, etc., and even smaller ones taken on the wing. The characteristic call is uttered frequently while feeding, and the birds' presence is made known before they are seen. While on the feed, they fly fairly fast, often swooping down low and circling before they disappear. Coastal areas and watersides are where they are mostly seen.

INDIAN CRESTED SWIFT

Gujerati Name—Chotaliyô Abābilô

Hemiprocne longipennis coronatus TICKELL

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. Male: Sides of face, chestnut; crest and upper-parts, bluish-grey; wings, dark brown glossed with green; lower-parts, grey to white on abdomen and vent; eyes, dark brown; bill, black. The female differs in being greyer above and paler below. This bird is found in mixed deciduous forest areas, flying in pairs but more usually in small parties, hawking for insects and occasionally seen perched on trees. In general appearance, the flight is Swallow-like, more so because of its long and pointed tail. The tail, however, is deeply forked but this is not always seen unless spread-out. The wing-beat, is fairly rapid. The call is a *chevoo-chevoo*. While flying the crest is not erected.

NOTES. A fairly fast flying Swift which is seen in the Gir Forest close to hills and forest coupes. When settled, the bird is reminiscent of a crested Parakeet or Cockatiel.

DISTRIBUTION. Most parts of India where there are deciduous forests. In Saurashtra, it occurs only in the Gir Forest where it is resident. Absent from Kutch.

India - Nepal
Cen. Sikk.

NESTING. 'Fauna of British India': Birds, Vol. IV, Page 355 (Stuart-Baker), says: "This beautiful Swift breeds during March, April and early May, wherever it is found, except in Ceylon" The nest is very small and made of bark, tiny feathers and saliva, and appears as a small pocket. It is extremely difficult to find as it appears like a knot on an overhanging branch of a tree. The site generally chosen is at a fair height, and it is only by watching the parent birds going to the nest that one may find it. The eggs, one to two, are pale grey to skim-blue and broad elliptical ovals.

FOOD. Insects. The general impression formed while the birds are feeding high is that of Palm Swifts.

CRIMSON-BREASTED BARBET OR COPPERSMITH

Gujerati Name—*Tuktūkiyō**Megalaima haemacephala indica* LATHAM

See Coloured Plate 13.

SIZE. Slightly larger than the Sparrow.

IDENTIFICATION. A small, compact greenish bird with a crimson patch on the forehead and breast, a short, stout bill and short legs. It has large dark eyes and bright yellow chin, throat and part of face. Upper-parts, green with a black bar over the head and two black stripes running down to the ear and bill. Lower-parts, pale yellowish-white and streaked on flanks. The short tail is green and the legs are fleshy. This is a common bird which is seen perched on evergreen or rotting trees. Its life is much like the Woodpecker's as it lives amongst trees, but it differs in its frugivorous feeding habits and its capacity to perch. It is not a very shy bird during the breeding season, and its monotonous call like a *took-took* is repeated incessantly, with the head raised and moved from side to side as it calls. The call is usually emitted while sitting on the top of a tree or on a high branch. The birds camouflage well in their natural surroundings, preferring the *Ficus* trees. Sexes alike.

NOTES. The body-pose is upright. The birds keep to topmost branches and thick foliage, but may also be seen perched on telegraph wires and posts as well as on leafless trees. The warm weather seems to stimulate them, and it is not rare to hear their call on the slightest change of weather. It is regularly heard during the hot months until the rains break. Nevertheless, a warm spell even in January or February makes them call. I have also heard the call during the sultry October weather. However, the bird is usually silent and lives singly except during the breeding season. It is a pugnacious bird within its established territory. It roosts in holes. Sexes are alike, but the male may be distinguished by a slightly larger patch of crimson on the forehead and slightly brighter plumage.

DISTRIBUTION. Most parts of India including Saurashtra and Gujarat but rare or absent in Kutch. Resident and moving locally.

NESTING. Season—February to June. The nest is a hole in a tree made by the birds which may be used for a number of years. New holes are often made close to the last one. Live branches, and so also rotten ones, are selected for nesting. The birds nest quite close to habitation, sometimes on trees next to houses and roads. The nest is usually fairly well out of reach, being ten to twenty feet high. However, in the Gir Forest I noticed some nest-holes which were placed low. The majority of nests are placed on the underside of thick branches at a downward angle. It is not always easy to tell a fresh nest when holes are bored

in dead branches, or whether old nests are in use or not. However, the birds are not in a true sense shy, and may be seen entering or peering out of their nest-holes at close quarters. Rotten or broken branches are favourite sites. The nest entrance is from $1\frac{1}{4}$ to $1\frac{1}{2}$ inches wide, and the egg-chamber descends about 8 to 10 inches deep, slightly widening at the bottom. The eggs, usually three in number, are white and oval in shape.

FOOD. Mostly fruit of *Ficus* and other wild trees, sometimes insects, and grubs: the latter often used for feeding the young. The birds may be seen picking figs and swallowing them whole. They prefer ripe fruit.

GOLDEN-BACKED WOODPECKER

Gujerati Name—Sōnēri Lakkad-Khod

Dinopium benghalense LINNAEUS

See Coloured Plate 23.

SIZE. Slightly larger than the Myna.

IDENTIFICATION. A large Woodpecker with a flashy golden back and a red crest which give a vivid impression of it in flight. The male has a crimson occipital crest. Face, streaked black and white; eyes, red. Bill, greyish-slate. Feet, dull greenish and having four toes, one of which is very small. The female differs from the male in having black forehead spotted with white, but has the crimson patch only on the hind-crown. The brighter golden yellow on the back varies in some specimens. The call is unlike that of the other two Woodpeckers, being louder and longer, like a scream or yell, *ki-ki-ki-ki-ki-ki*, quickly repeated. In the breeding season the birds become almost noisy, emitting all sorts of sharp whistling calls. Pairs may be seen close together.

NOTES. These birds keep to deciduous forests and large trees, scaling them in spiral fashion as they move upwards from the bottom. They have a very erect pose, especially of the head and neck. They are a little shy, but can be watched from a fair distance while they are feeding or sunning themselves. They can be located by their characteristic calls and by visiting areas where there are rotten trees and where timber is being felled. However, they prefer to alight not on fallen trees but only on those which are still standing. Yet I have seen them close to the ground alighting on stumps, and occasionally on the ground close to termite hills. The best time to observe them is at sunrise. They also seem to make use of nesting-holes when roosting during Winter. While collecting specimens, I found that their nails were very sharp, and when the birds were shot, their curved nails prevented them from falling to the ground immediately. The flight is straight and swooping. When followed, the bird

immediately flies and takes cover behind a trunk or branch, as if playing hide and seek.

DISTRIBUTION. Most parts of India including Gujerat; restricted to the forest areas of the Gir in Saurashtra but ventures into sparser forests surrounding it. Fairly well-distributed throughout the Gir Forest and the Girnar where it is resident.

NESTING. Season—March to July. The nest is a hole in a tree made by the birds and placed not always very high up. The width of the hole is approximately $2\frac{1}{2}$ to $3\frac{1}{2}$ inches and the nest cavity is fairly deep. Rotten trees as well as live ones are used, preferably large tall ones. However, on the outskirts of the Gir where trees are stunted, the birds nest at lower heights. The eggs number three to four, and are white and glossy.

FOOD. Insects and their larvae, termites, ants and berries. The birds are beneficial to forests.

YELLOW-FRONTED PIED WOODPECKER

Gujerati Name—Kābarō Lakkad-Khod

Picoides mahrattensis LATHAM

See Coloured Plate 23.

SIZE. About that of the Bulbul.

IDENTIFICATION. A bird with a fairly long, stout bill, a large head, an elongated body, short legs and a sharply pointed short tail. Male: Upper-parts, barred black and white; the hind-crown has a bright red cap which forms a kind of crest; rest of head, yellowish-brown. Lower-parts, dirty white streaked with brown, with a patch of reddish-pink on the abdomen. Female: Differs in having the head a pale straw-yellow and the barring being less pronounced on the upper-parts. This bird is found in the forest, thorny scrub and gardens. It is typically arboreal in habits. It may be seen clinging to a trunk or branch of a tree in various positions, or flying from one tree to another and alighting at the bottom and working its way up in spirals. The flight is undulating. When being closely watched, it takes shelter behind a branch or trunk and remains there until its suspicions are allayed. The birds may be seen singly or in pairs. The common call is a sharp and rather harsh *kirrick-kirrick* which is uttered from time to time. The bird also makes a tapping sound as if a man is knocking at a door; this is made by tapping the bill on trunks or branches in search of food. This should not be mistaken with the 'drumming' it emits.

This sound is made with the bill and head lowered, the former touching the tree and the latter appearing as if it trembles as the sound is made. Some ornithologists are not quite certain whether the sound is actually emitted or only caused by the tapping of the bill.

NOTES. The birds have sharp toe-nails which enable them to cling upside down and climb backwards and forwards without difficulty. They are fairly shy but may be closely observed while feeding or near the nest-site in the early morning. The call and the tapping sound are true indications of their presence. This is deliberate but does not continue for long, being often repeated at intervals when the birds are actively feeding. Groups of markings on trees like small spots in a roundish pattern is another indication of their presence. These Woodpeckers are active, moving all over the forest, but keeping to the same area during the breeding season. They prefer 'Babul' forests and wooded areas. As smaller forested areas are destroyed, the birds are being pushed back into remoter forests and 'wadis'.

DISTRIBUTION. Most parts of India including Gujerat and Kutch and the whole of Saurashtra. Fairly common and resident where found.

NESTING. Season—January to March, rarely April. The nest is made by boring a hole in a trunk or branch of a tree. The hole is round and the entrance about $1\frac{1}{2}$ to 2 in. wide. It is placed from 3 to 12 ft. from the ground. The nest cavity is from 8 in. to 1 ft. deep. The eggs number three to four, and are white and almost spherical. 'Babul' trees are favourite resorts in which they nest. The birds prefer to bore new nests every year, very often next to the previous ones; and the inner red bark of the entrance holes means a fresh nest. They prefer live trees for nesting. At this time, they are shy and do not easily disclose their nests. They are intelligent birds and I have noticed that they will nest in other kinds of trees if a particular species is being felled in the area. Edges of forests are likely nesting areas and roadside trees are often made use of. Both parents take part in the incubation and rearing of the young, though I have always found the male a little more cautious at the nest-hole. When fully fledged, the young resemble the female parent, though young males have a tinge of rufous on the hind-crown. Small insects from the same tree on which the nest is situated are readily taken to supply food for the young. The nestlings can be heard chattering while being fed inside the nest.

FOOD. Insect life, *e.g.*, wood-borers, ants, termites, spiders and their larvae but rarely fruit and gum. As they devour the wood-borers, these birds are of much help to the silviculturist as destroyers of harmful insects and their larvae. The tapping reveals whether a tree or branch is hollow or affected by insects. Woodpeckers have a long saw-like tongue which can enter the hole to draw

out insects. Fruit trees and other kinds of trees affected by wood-borers are regularly visited by these birds. They are, thus, real friends of the farmer and the forester.

INDIAN PYGMY WOODPECKER

Gujerati Name—Bhārati Nānō Lakkaḍ-Khod

Picoides nanus VIGORS

See Coloured Plate 23.

SIZE. About that of the Sparrow.

IDENTIFICATION. Like all Woodpeckers, this bird is typically arboreal. Male: Head, light brown on the crown, with a very small red spot behind and above the eyes which is not easily seen in the field except at close quarters or with binoculars. There is a creamy streak from the eyes towards the neck and a larger brownish band below it. Upper-parts, barred dark brown and white. Lower-parts, dirty white, streaked with light brown. Bill and legs, greyish to brownish-black. Eyes, yellow. Female: Differs in being lighter brown above, and lacks the red spots of the male. This bird is reminiscent of the Pied Woodpecker but is very much smaller. Its presence is first revealed by its call which is a prolonged *ki-ki-ki-ki*, somewhat resembling that of the large Golden-backed Woodpecker but uttered more softly and quickly. The tapping sound is faster and not so audible as in the case of the larger species. This little Woodpecker is a bird of deciduous forest and is seen singly or in pairs. It visits dead trees in the early morning and may be seen sunning itself or feeding on insect life. It is an active bird while feeding and moves quickly from tree to tree, preferring the higher branches and rarely coming down as low as the trunk.

NOTES. The early morning is the best time to watch these birds. They become wary if approached or followed, but if one keeps still, they permit close observation. At roosting time, they enter their holes cautiously, arching their necks and moving forwards and backwards before entering. They roost just before darkness falls in holes sometimes fairly high up and frequently in rotting branches.

DISTRIBUTION. Gujerat and Khandesh to Madras and the Gir Forest in Saurashtra but absent in Kutch. Resident wherever found. It is fairly plentiful in the Gir Forest and extends up to the Girnar. Outside this area it is rare.

NESTING. Season—April to June. The nest is a hole made by the birds themselves at a height of 5 to 30 ft. or more. The nest-hole is round and the entrance

one inch wide which is usually situated on the underside of a branch. In the Gir Forest, the birds nest in Teak and such other trees. At the slightest noise, the female puts her head out of the nest-hole. The nest-chamber runs 6 to 9 inches deep. The eggs number three and are glossy white and elliptical in shape. The birds are not at all shy, allowing fairly close approach. The nest-hole looks like that of the Crimson-breasted-Barbet, but it is a trifle smaller.

FOOD. Small insects, ants, wood-borers and bark-eaters. They seem to be useful birds.

WRYNECK

Gujerati Name—Thad-Ranga

Jynx torquilla LINNAEUS

See Coloured Plate 23.

SIZE. Slightly larger than the Sparrow.

IDENTIFICATION. In shape, the bird is like a Woodpecker but differs in colouration which resembles that of a Nightjar. It is greyish-brown with black and brown pencil markings. There are black streaks on the back, with a rufous-grey tinge on the head. Lower-parts, slightly lighter but with dark bars and black arrow-head markings on a whitish background. Bill and legs, short, straight, and brown in colour. The bird lives amongst trees and resembles Woodpeckers in habit, climbing the trunks in the same manner. It can climb backwards as well as forwards. It affects jungle, fruit groves, low scrub country and gardens, often keeping to hedges. As its colouration matches with barks of trees, it is very seldom noticed. It is purely a Winter migrant and is solitary in its habits. It is not often observed on account of its shyness and obliterative colouration. Sexes alike.

NOTES. A regular Winter visitor, seen sporadically. It is silent and inconspicuous. The feet of the bird are adapted for perching.

DISTRIBUTION. Europe and Turkestan; migrating into North Africa and most parts of India including Kutch and Gujerat and throughout Saurashtra during the Monsoon and Winter. Return migration in March.

FOOD. Insects taken from the trees as well as on the ground.

INDIAN PITTA

Gujerati Name—Navarāṅga or Hariyō

Pitta brachyura LINNAEUS

See Coloured Plate 19.

SIZE. That of the Myna.

IDENTIFICATION. This is a unique bird as there is no other that resembles it in Saurashtra; perhaps the White-breasted Kingfisher gives a vivid reminder of it in flight. It is a beautiful, multi-coloured bird from which it gets its Indian name 'Navrang', which means having nine colours. While standing or perched, all the colours are not visible, and the bird does not give a striking appearance except when seen at close quarters or while flying. The large head has three broad black stripes, two covering the eyes and the area below, the other running down the centre of the crown, the rest of the head being khaki. The bill is blackish with a fleshy-red base, only visible at close quarters. Chin, whitish, and lower-parts, from breast to legs, khaki-yellow to rich almond. Upper-parts, dark green with a bronze sheen and a bright patch of bluish-green on the lesser wing-coverts and on the rump. The stubby bluish tail has a black band. In flight the white patches on the blackish wings show up well. Under-tail to abdomen, a flaming-red to pinkish-red. Legs, long and fleshy in colour. Eyes, large and dark brown. This is a shy bird, shunning observation. It inhabits forests, shady gardens and orchards where there is ample undergrowth. It enters plantations and low evergreen vegetation having plenty of cover, and may be seen hopping about on the ground or perched on tops of trees. It usually keeps to the ground or low branches. It has a noticeable habit of moving its stubby tail up and down, thus attracting attention. It emits a whistle and a breeding call which sounds like a *whew-veeeooo*, which is repeated frequently. The Pittas are always seen singly and are pugnacious. During the breeding season, they may be found in pairs but seldom keep close together. They call from tops of trees or from branches or from the ground.

NOTES. During the breeding season I was able to bring the Pittas close to 20 feet by imitating their whistling calls while remaining still in thick cover or behind a large tree. They scurry or fly into thick cover or undergrowth at the slightest approach. They are, therefore, best studied with binoculars from a distance. Although brightly coloured when seen at close quarters and in flight, they look most inconspicuous at a distance. During the rains, they allow close approach and often enter gardens, but they are always of a secretive nature. From April to July-August, they come into breeding condition and may be heard calling throughout the day in their characteristic manner. These calls are answered and the females, having been attracted by the males, soon

pair up. The sexes are alike and difficult to distinguish. During the breeding season, the males keep to their territory, calling more vigorously as the season advances. In the Gir Forest I noticed that they kept to the vicinity of ravines, rarely ascending the hills very high. They prefer cover of 'Karamdi' (*Carissa carandas*) bushes and such shrubby undergrowth, and I found them partial to Teak coppice also. I have often heard them calling in the Sātbarā Valley and the area close by at the base of the Shatrunjaya Hill at Palitana. I have records from Wankaner during the hot weather, and from Mahuva (Gohilwad), where they occasionally breed. During the rains, they may be seen anywhere as local migrants. They appeared almost abundant in the Gir during the Summer of 1947 when I found nests as early as May. Except for the nesting time, the sexes keep apart. These birds may be kept in cages, but they must be kept separately as they fight except during the breeding season. When attacked by Hawks, the bird raises both or one of its wings in defiance but falls an easy prey if this bluff is disregarded. On the whole, owing to its secretive habits it is not commonly captured.

DISTRIBUTION. Most parts of India and Gujerat and better wooded or shaded parts of Saurashtra. Locally migratory or resident in some parts of Saurashtra. It is fairly widespread in the Gir Forest and the Girnar range, where it breeds regularly. It may be found occasionally breeding in other parts of Saurashtra. I have found it nesting in the valleys of the Shatrunjaya Hill, Palitana. It is also seen in the Barda Hills.

NESTING. Season—May to September. The principal months for nesting are June to August. During the breeding season, the birds are pugnacious and do not allow rival birds to enter their occupied territory. The nest is made of twigs and leaves, and placed at various heights from eight to fifteen feet. It is placed in a fork of a tree, and is football-like in shape with the entrance over the side near the top, somewhat reminding one of the nest of the Crow-Pheasant. The inner lining is usually made of leaves. Four to six round white eggs, often spotted with black, are laid. The birds prefer to breed in vegetation close to ravines and on flattish ground, not necessarily in thick undergrowth. I have noticed that they often keep to the same territory during the breeding season, and old nests may be found close to those in use. A harsh call is emitted by the parent birds when the young are threatened with danger. Fledglings have their colours much subdued, with the lower-parts smoky-black and the red on the abdomen faint or hardly visible; the bill has the tip and lower-mandible bright orange. They emit a plaintive whistle.

FOOD. Insects. The birds feed on the ground, turning over leaves and other vegetable matter. They may be heard on the ground while feeding and moving amidst dry leaves. They feed during the early morning and evening, and may be observed coming out from thick undergrowth but slipping in at the slightest

suspicion. They camouflage well amongst green foliage. The movements of the tail and the bright red colouration of the lower-parts are noticeable while feeding. The feeding habits are reminiscent of the Thrushes, but the bodypose of the Pitta is much more upright, with the chest puffed out and the tail frequently moved up and down.

SINGING BUSH LARK

Gujerati Name—Agan

Mirafrja javanica HORSFIELD

See Coloured Plate 24.

SIZE. About that of the Sparrow.

IDENTIFICATION. This bird is recognised from the Red-winged Bush Lark by the absence of chestnut-brown feathers on the wings and the inner-web of its outermost tail-feathers being white or very pale rufous, and also by basal one-half of primaries rufous; the rufous areas on the outer and inner webs are always separated by a brown band. But for this it seems to have a rounded crest which it occasionally erects when displaying. On the upper-parts, the design of the wing-coverts has a shield-like appearance. There is sometimes a blackish halfmoon-like mark near the base of the head. The bird frequents open grassland, scrub and cultivation. Sexes alike.

NOTES. This bird is known as the 'Agan' and is sometimes kept as a cage bird for its beautiful song. In comparison with the Sykes' Crested Lark, the song notes are softer and the broadcast of avian music faster. In the field, this species is distinguished from the Red-winged Bush Lark by its display by flying and singing high up in the sky much like the Sykes' Crested Lark.

DISTRIBUTION. Northern and Central India; also found in Kutch and Gujerat; patchy in Saurashtra where it is resident and local migrant.

NESTING. Season—June to October. The birds nest on the ground under some thorny bush or in open grass. It is a typical Lark's nest, being often domed. The eggs number three to six and are yellowish-white, blotched with brown.

FOOD. Insects and seeds.

RED-WINGED BUSH LARK

Gujerati Name—Kāthiāwādi Āgiyā Agan

Mirafra erythroptera BLYTH

See Plate 45.

SIZE. About that of the Sparrow.

IDENTIFICATION. Lower-parts, dirty white, with a few streaks on lower-breast forming a patch. Upper-parts, khaki-brown and well defined. Streaks on crown and breast, distinctly black and clear. Both the webs of primaries, chestnut and clearly seen in flight. The bird's manner of courtship-flight is another clue to its identity. Sexes alike.

NOTES. The bird may be seen in open arid country, thorny scrub and sparsely wooded areas, mainly on well-drained land. During the breeding season it flies up almost perpendicularly and then descends with outstretched wings, uttering a succession of short whistles. It often perches on a small thorny bush from where it sings and rises, and then descends in a curve in parachute fashion to the same site, emitting a monotonous whistle *tee-tee-tee-tee*. The common call is a twitter. These birds are inclined to be a little shy and suspicious when being watched, running away and hiding behind bushes. In cattle-grazing areas, however, they are quite tame. Open, stony hills, sparsely covered and studded with low thorny trees and bushes, are their typical habitat. They are found in hilly grassland where the grass is short. They also affect scrub forest. In the breeding season many pairs can be seen in hilly areas. In the flat arid country of Jhalawar, they are very common. The bases of hills of typical 'chinkara' ground is where I have always seen them.

DISTRIBUTION. Common in Saurashtra, this race having been recently recognised as *furva*. The lighter coloured race *sindiana* is found in Kutch, Gujarat and possibly N. Saurashtra. Resident.

NESTING. Season—February to March, and again from June to October. The Monsoon months are when most birds breed. The nest is always on the ground and generally domed or half-domed. It is fairly neat and made of grass, being placed in a shallow depression near a stone or bush, less commonly near a ravine. The entrance in some nests is almost tubular as in some of Bustard-Quails, but this is not usually the case. The eggs number three to four. I have seen two types of markings: One with a white ground with light reddish and yellowish specks mixed together; and the other with a whitish ground but heavily splashed with dark reddish-brown, forming a cap at the broad end. The parent bird sits close and only gets up when nearly stepped on. When suspicious, however, it deserts the eggs quickly. The nest is well-hidden and when in dry grass, the dome is made of the same material.

FOOD. Insects and seeds.

ASHY-CROWNED FINCH LARK

Gujerati Name—Bhōṇ Chakli

Eremopterix grisea SCOPOLI

See Coloured Plate 24.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Male: Upper-parts, grey-brown; in some birds browner, paler in others. A pale grey patch on the forehead not always distinct. A whitish patch on the cheeks except near and across the eye which is black. The whole of breast, from chin to under-parts, black. The bill is thick and Sparrow-like. The feet, short and hardly visible when the bird is squatting. Female: A uniform dusty colour, very much like the hen-Sparrow. These birds are examples of perfect camouflage as they merge completely with their surroundings; the dark under-parts of the male resemble the shadow of a round stone. They are found in open desert, rocky barren hills, mud-flats, rocky, wooded, scrub forest, and cultivated tracts. They are also seen occasionally on the sea shore. They prefer open flat country and may be seen close to habitation. They congregate in flocks during Winter, and are often seen flying in large numbers even at the seaside. Otherwise, they may be seen in pairs. They have an undulating flight but never go very far after being disturbed, settling quite close and camouflaging immediately. They perch on stones; I have also seen them alighting on trees and telegraph wires. They emit a short chirrup-like call.

NOTES. While one sits motionless in open country watching the landscape, often an impression is given that the land holds no birds; but if one waits patiently, one suddenly sees movement and the moving objects take the form of birds reminiscent of miniature Sandgrouse: they are Ashy-crowned Finch Larks. Having lost their fear, the birds soon move about unconcerned. They are not shy and will allow close approach, relying much upon their blending colouration. The birds on roadsides are not disturbed even by motor-cars.

During the breeding season, the male has a courtship flight which is interesting to watch. He flies almost vertically upwards and then performs a semi-somersault, coming downwards headlong and then rising up in a curve, only to repeat the performance again and again. After doing this undulating display, he suddenly settles on the ground. While descending, he emits a sweet whistle, sounding exactly like a "Bapayyo" whistle when the strings are pulled. This display is reminiscent of the courtship display of the Tawny Eagle which acts more or less in the same way though uttering a grunt instead of a whistle. The undulating flight is caused by the wings being closed and opened suddenly. The male generally drops to the ground and again resumes his courtship display a number of times. The whistle varies in tone in some individual birds.

DISTRIBUTION. The most of India including Saurashtra, Gujerat and Kutch. Resident and common.

NESTING. Season—Varies considerably from February to October, and some nests may be seen throughout the year. However, most nests are found between February and April and then again from June to October. The nest is a very small, neat cup made of fine grass and lined with hair. It is placed on the ground, the site often varying. It is often situated in an old cattle hoof-mark in dry mud, or placed under the protection of a stone, and is generally well-hidden. It is usually found in uncultivated land, either in open barren ground or on small open hillocks or uneven ground of the stony type. Rarely does one find a nest in short scrub jungle. I have found many nests close to the roadside. The male keeps guard from an elevated ground, a prominent stone, or a rock. Both birds incubate and change places often during the hot hours. The eggs number two to three. A small rise in open ground, mixed with debris and stones, is where I have regularly seen nests year after year. The young in down are uniformly yellowish.

FOOD. Seeds and insects.



RUFIOUS-TAILED FINCH LARK

Gujerati Name—Khétariyō

Ammomanes phoenicurus phoenicurus FRANKLIN

See Coloured Plate 24.

SIZE. Slightly larger than the Sparrow.

IDENTIFICATION. A dark chocolate-brown bird which matches exactly with the earthy-brown colour of ploughed fields. Lower-parts, more reddish-brown. Identified easily by a conspicuous light reddish-brown or rufous patch on the rump. The bill is comparatively short. The wings are fairly long; the tail is moderate in length and slightly forked. This bird is seen in open country and ploughed fields, and is fairly common everywhere. It has a pretty song which it often repeats while flying, a song easily distinguished from those of other Larks in being metallic and melodious, but it is repeated again and again. The flight is undulating, and the bird has a habit of alighting abruptly on the ground. It is nearly always seen in a crouching position, perched on a small stone or a sod of earth. During the breeding season, it flies up and sings but not for very long as do the other Larks mentioned earlier. It is a bird difficult to spot in its natural surroundings.

NOTES. These Larks are seen singly or in pairs, frequently with their wings half spread-out.

DISTRIBUTION. North-Western India, Kutch, Gujerat and all parts of Saurashtra. Resident and common.

NESTING. Season—February to May, most birds laying in March. The nest is one of the most difficult to find, the bird matching its own colour with the environments, especially in ploughed fields or flat stony ground. The nest is a neat one made of grass and lined with hair or wool, and it is well-hidden in the shade of a stone, or under a clod of earth, mostly in ploughed fields. The eggs number three to four, and are of khaki or yellowish stone colour with inky and reddish to yellowish-brown spots, at times forming a ring at the larger end. The birds often become agitated when a close approach to the nest is made, and this seems to be the only clue to enable one to find their nests. Both parents fly and settle together.

FOOD. Insects and seeds. While searching for food on the ground, the bird opens and closes its wings frequently.

DESERT LARK

Gujerati Name—Rāṇa Chāṇḍūl

Alaemon alaudipes doriae SALVADORI

See Coloured Plate 20.

SIZE. Between the Bulbul and the Myna.

IDENTIFICATION. The largest Lark seen with us. The body-pose is very upright when on the ground. Upper-parts, sandy-grey to greyish-khaki; lower-parts, white, streaked with dark-brown on throat and breast. Tail, khaki-black, edged pale, with outermost feathers edged white; eyes, brown, with a dark streak across it and a pale white supercilium. A blackish line running from bill to cheek; bill, curved and fairly longish. The legs are conspicuous and china-white. In flight, the two white bands on the blackish and khaki wings immediately identify the bird. It is fairly swift on the wing, being able to turn well. As a rule, it is seen running on flat ground, stopping now and then to pick up some food. Sexes alike.

NOTES. Found in desert areas of Kutch, Gujerat, Saurashtra and extensive semi-desert grasslands on the border of the Little Rann of Kutch. The birds are usually seen solitary but sometimes in pairs. They appear to be very hardy, being able to withstand the scorching heat of the desert. They rarely

perch on low bushes except during the breeding season. I came across them fairly frequently in the Little Rann while filming the wild asses.

DISTRIBUTION. From Iran to Kutch and Northern Saurashtra, on the border of the Little Rann of Kutch, in Dhrangadhra and N.-W. Gujarat. Resident on the borders of the Ranns of Kutch.

NESTING. Season—unconfirmed; possibly during the rains. The nest is a largish cup and untidy, made of grass, twigs and a few feathers. It is placed on the ground in grass under a bush or plant. The eggs are whitish or pale buff, splashed with reddish-brown and fairly well-marked with grey and lavender. Some eggs form a ring at the larger end.

FOOD. Insect life and seeds. The bird is a fast runner, taking most of its food from the ground.

SHORT-TOED LARK

Gujerati Name—Pūlak

Calandrella cinerea EHMCKE

See Coloured Plate 24.

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. This bird has khaki upper-parts broadly marked with black, and white lower-parts. Breast, pale brown with two small black spots on each side, not always very conspicuous. The bird has a pale supercilium. Upper-mandible, horny-brown; lower-mandible, greenish-yellow or horny-yellow; legs, fleshy-brown. A small brown patch on ear-coverts is distinctive, with a hind-claw which is straight and short and of the same size as the hind-toe. In the hand, the nostrils are covered by plumes. The wing has nine primaries, and the secondaries reach up to the primaries in length. Sometimes, the feathers of the crown when erected appear like a crest. Tail, brownish mixed with white. Sexes alike.

NOTES. The Sparrow-like birds seen flying in large flocks during the Winter months all over the countryside generally belong to this species. They settle on the ground and start feeding in the early morning and evening. Many Birds of Prey feed upon this species, especially the Red-headed Merlin and Tiercel.*

* Male Peregrine falcon.

The flight is undulating. The birds roost on the ground and I have often noticed the neat round scrapes they make to roost in. They are supposed to be palatable but I have not found them very tasty. They are indeed very fat at the time of their return migration, *i.e.*, February-March. On the ground, they often run fairly fast. In the Bhal area, I have seen thousands of these birds coming down to drink at a water hole.

DISTRIBUTION. Breeding from Southern Europe to Iran and migrating south of its range to most parts of India including Gujerat, Kutch, and throughout Saurashtra during Winter. Common.

FOOD. Mostly seeds.

BHAVNAGAR'S SAND LARK

Gujerati Name—Bhāvnagar-nō Rétāl Chāṇḍul

Calandrella raytal krishnakumarsinhji VAURIE AND DHARMAKUMARSINHJI

See Coloured Plate 24.

SIZE. About that of the Sparrow.

IDENTIFICATION. This is a small Lark, its size being about that of the Ashy-crowned Finch Lark. Upper-parts, dark greyish-khaki forming almost a uniform pattern and narrowly striped with blackish-brown on the crown. Lower-parts, off-white with faint brown streaks on the khaki breast. Tail, squarish in shape and blackish in colour; the central tail feathers, khaki-black, and the outer pairs, almost white; the penultimate with the outer-web, nearly all white. A pale white supercilium present. Eyes, brown. Bill, slender and tipped black. Legs, pale fleshy-yellow; hind-claw, short. Wing measurements, 76 to 85 mm. Sexes alike.

NOTES. The birds are found on mud-flats and in semi-desert country close to mouths of rivers and salt pans. They are excellent runners and, when flushed, emit a low *cheruk-cheruk* from which they are immediately identified. They are fairly confiding birds affording close approach. They thus tolerate traffic on road and rail. The display of the male is rather erratic and short-lived when in the air. He sings and flies in spurts almost vertically and at not a very great height. He sings for a short time in a soft tone and then dives to the ground to alight. On the ground, he often sings in front of the female while courting and raises his crown feathers and flips his wings from time to time. Two males may spar at each other with their heads lowered. It is a common sight to see a male following a female during the breeding season. In the non-breeding season these Larks may be seen in small flocks of 10 to 20 birds. They

sometimes enter cultivated areas and I have seen them feeding next to a flock of sheep.

DISTRIBUTION. This new race was discovered by me to be resident in the Bhavnagar area. For further description see J.B.N.H.S., Vol. 52, No. 1, Page 8. It differs from nominate *raytal* and *adamsi* in being heavily streaked and distinctly darker, with much grey above not sandy; the flanks are greyish and faintly streaked unlike the other two races. The short thick bill is blackish, not horn-coloured or yellow at the base as in *adamsi* and nominate *raytal*. The race found in Kutch is *adamsi*, whereas nominate *raytal* is found in Gujerat.

NESTING. Season—March to October, the principal months being June to September. The nest is a small cup of grass or a shallow hollow situated in grass or under some shrub or stone in open mud-flats. The eggs number two to three; they have a white ground and are spotted with light and dark brown colour, sometimes mixed with grey, the spots becoming denser at the broad end.

FOOD. Insects and seeds.

FRANKLIN'S CRESTED LARK

Gujerati Name—Ghāghas Chaṇḍul

Galerida cristata chendoola FRANKLIN

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. Much larger than the Sykes' Crested Lark whom it resembles. The crest is conspicuously pointed and held vertically. The upper-parts are dusty to sandy-grey and streaked with black, the lower-parts are dirty white, and the breast is streaked finely with brown. Like Sykes' Crested Larks, it walks and stops, nodding its head as does a frisky horse. It is found in open grassland or semi-desert type of ground. The posture is the same as in other Larks but the chest and head are held particularly high and jauntily. The bird prefers flat country where the grass is not very high and is found even where there is very little or no grass in semi-desert country, visiting grasslands at the beginning of the rains. It has a louder call and a more powerful song than that of the small 'Chandool', but to my mind it is not as sweet and fast a singer. When walking, it emits a short call like *tō-tō-teeet*. It sings beautifully in the air or on the ground. The bird is often seen perched on a projecting stone. Wing: 96 to 121 mm.; bill: 17 to 24 mm.

NOTES. I would not say that this bird is common in Saurashtra though I have seen it frequently in the semi-desert parts of the State. It is a popular bird with bird-fanciers because of its song.

DISTRIBUTION. From Northern India to Bihar, Madhya Pradesh, Kutch and Gujerat. Uncommon in Saurashtra; seen more frequently in the northern districts. Resident and local migrant. I found it breeding in June and July at Fulsar (Gohilwad) and at Porbandar. Many pairs seemed to be resident there. I have also observed it in Dhrangadhra and Jamnagar.

NESTING. Season—June to September. The nest is situated in open grassland where there are short grass-tufts and stunted thorny bushes. The eggs, three to four, are greyish-yellow with brown patches. The nest is similar to those of other Larks and is made of grass and lined with hair.

FOOD. Insect life picked up from the ground. The bird also eats seeds.

SYKES' CRESTED LARK

Gujerati Name—Chanḍul

Galerida deva SYKES

See Coloured Plate 24.

SIZE. About that of the Sparrow.

IDENTIFICATION. A light khaki-brown bird but often much suffused with a dark brick-red or rufous-brown colour on the under-parts whereas in some birds this colouration is replaced by pale buff colour. A small portion of the breast has fine dark streaks. The head has a distinctly pointed crest, conspicuous when erected. The tail is short. The bill is brownish and the legs are flesh-coloured. Found in open semi-desert and grassland. The 'vids' always harbour these birds, but during the hot months they are seen on the coastline in fairly open country and amongst ploughed fields. This Lark has a marvellous ability to mimic all types of sounds, from the yelping of a dog to the whistle of a Kite. A whole series of other bird-songs flows out when it is singing, and so quickly varied is this repertoire that it is often difficult to grasp the various sounds emitted in the medley of sweet music. As birds do not very often change their musical notes, it is easy to recognise the songs of other birds and the animal-calls such as the cat's meow as they are mimicked. Moreover, individual birds can be identified by their characteristic records of mimicry. During the mid-Summer, they are often seen flying high up in the air like tiny specks, singing beautifully and fluttering their wings like butterflies. One cannot see the bird to begin with, but from the flow of sweet song one can at last trace

the singer. At the approach of the first rains, these Larks come into breeding condition and we see the male fluttering his wings while on the ground and chasing the female, at times attracting her by low but sweet notes, or approaching her with bowing movements. He often takes small quantity of mud in his beak and flies pugnaciously, sometimes followed by the female or *vice versa*. This seems to be a part of the courtship. Again, a male, with the crest erect, may be seen to circle round a female, while she is fluttering her wings on the ground in a crouching pose. After the male bird has been singing for some time in the air, he may suddenly descend and alight near the female, or on a bush near the nest. The common call is a *te-veet-lee* whistle, uttered frequently from the ground. Sexes alike but the female has a smaller crest.

NOTES. This Lark is a beautiful songster and a most popular bird with bird-fanciers. Young birds, partly fledged, can be caught and fed on insects, and then transferred on to a 'choga' or mixed diet which is made of gram, flour, ghee and meat. They can be taught to sing tunes and have been kept in captivity for fifteen to twenty years. The song of this species is not loud but is formed of short whistles which can be heard clearly; one must keep quiet to appreciate it really. There might be two birds aloft in the sky, or a pair, competing against one another. I have heard these birds singing aloft long after sunset. They are not very shy, and one can watch them at ease at close quarters. The birds in their breeding territory have their favourite perches, for instance a small twig on a bush or a prominent piece of stone. They are captured with a long stick of thin bamboo smeared at the end with bird-lime. The method adopted is to lie flat on the stomach and drag one's body very slowly towards the feeding birds, keeping the stick in front until one is within range. Then a sudden push with the stick, aimed well, causes the bird-lime to fix on to the feathers and the bird is caught. Another method is by having a decoy bird in a cage with hair-nooses tied round it. A rival bird coming to fight is caught while attacking the bird in the cage. Young male birds, fully fledged and taken from the nest, become the best songsters. Then one has the enjoyment of training them to whistle favourite tunes. Once fully trained, they will commence the song at the snap of the fingers. They respond to the trainer more quickly than other species. When attacked by small Falcons, the Lark rings up into the sky to escape and, when very hard pressed, shoots down to earth for safety.

DISTRIBUTION. Northern and Western India to Mysore, and the whole of Saurashtra. Resident, common and prone to local movements.

NESTING. Season—June to October. The nest is placed on the ground and is made of grass. It is a neat round cup and sometimes fairly well-hidden under a tuft of grass or very small plant in 'vids' or in hilly, stony, open country, or in fields. The eggs number three to four, and are light khaki to khaki-grey,

sometimes with very fine streaks of brown, but more often they are uniform in colour; the broad ends are much darker. The fledglings have black, buff, rufous and white markings on the brown upper-parts; their lower-parts are pale rufous and the crest is visible. If constantly watched at close quarters, the parent birds will not often feed the young with the food brought for them.

FOOD. Insects and seeds; chiefly the former. Most of the food is taken from the ground or caught in the air when flushed. Grasshoppers and their larvae are the main sources of food during the nesting period.

SMALL SKYLARK

Gujerati Name—Ja] Agan

Alauda gulgula FRANKLIN

See Coloured Plate 24.

SIZE. About that of the Sparrow.

IDENTIFICATION. Recognised by the khaki upper-parts boldly streaked with dark brown, the off-white lower-parts and the pale fulvous-brown breast and flanks finely streaked with blackish-brown. Tail, slightly pointed when closed, with outer tail-feathers having white and rufescent edges. The hind-claw is usually very long. Bill, attenuated, slender and slightly decurved. Wings, rounded in shape. Wing measurements: 84 to 105 mm., normally 90 to 102 mm. Sexes alike.

NOTES. In the field the birds have a habit of lying close and, when flushed, emit a *troo-turr-turr* and ring up into the sky. During the hot weather they are found close to lakes and prefer green vegetation such as lucerne fields or Summer millet crops. They are also found on mud-flats and other coastal areas. They fly low in an undulating manner in open country and can be confused with the Indian Pipit. The song is much like that of the Sykes' Crested Lark but not as sweet. It is heard during the last hot months and the Monsoon.

DISTRIBUTION. Resident in most parts of India and uncommon in Saurashtra. There are a number of races. The race found in Kutch is *punjaubi* ('The Birds of Kutch', p. 57-58).

NESTING. Season—March to September. However, it differs according to locality, the principal months being from May to September. In courtship, the shortish wings are flattened as if embracing the female and the feathers of the crown are raised. I have seen a male displaying to two females on the ground in this manner. The nest is typically that of the English Skylark and is

placed in open cultivated country or grasslands. It is well-hidden among roots of grass, under a clod in ploughed field or under a stone in waste land. It is a cup lined with grass and not very neat. Two to three eggs are laid, rarely four or five. They are creamy-buff or pale grey splashed with pale brick-red or reddish-brown, the markings being larger at the broad end, often forming a cap. The nest and eggs are hard to find once the rains have commenced. Both the parents incubate.

FOOD. Insects and seeds.

SIBERIAN SAND MARTIN

Gujerati Name—Pardéshi Rétāl Abābil

Riparia riparia diluta SHARPE and WYATT

SIZE. Much smaller than the Sparrow.

IDENTIFICATION. Upper-parts, mouse-grey with light edges; lower-parts, white, with a dark pectoral band on the breast; shape of tail-end feathers, a shallow U. Sides of head, sandy-grey. It may easily be confused in the field with the darker Indian Sand Martin which may also occur with us. Sexes alike.

NOTES. The birds are seen hugging the coast-line in almost single file, usually moving northwards. I have seen them regularly during the Winter months on the coast. They fly low above the water, emitting a short call intermittently. The Yuveraj of Jasdān mentions seeing them in Jasdān, and I collected a specimen from there, at Rajawadla Tank, in the Winter of 1946. A group of darker and smaller birds which I suspected to be the Indian Sand Martin (*Riparia p. chinensis*) was seen at Dhrangadhra on a small lake, flying low above the surface of water and intermittently emitting a short call.

DISTRIBUTION. Migrating into India from the North. Uncommon in Saurashtra but a regular Monsoon and Winter migrant. It breeds in Northern India, the Punjab, etc.

FOOD. Minute insects near water.

CRAG MARTIN

Gujerati Name—Pardéshi Gār Abābil

Hirundo rupestris SCOPOLI

SIZE. Slightly smaller than the Sparrow.

IDENTIFICATION. Distinguished from the Dusky Crag Martin by its lighter colouration, being paler brown; it is brownish-grey on the back and rump, the lower portion also being paler. In the hand, the under tail-coverts darker than the abdomen and breast in contrast to the uniform colouration of the Dusky Crag Martin. The chin is spotted and streaked in this species, and the wing measurements are over 120 mm. The birds are seen in groups. Sexes alike.

NOTES. First recorded in Saurashtra by the Yuveraj of Jasdan at Hingolghadh (Jasdan), and confirmed by me after collecting specimens from the same place. These birds are often seen mixing with the commoner species during the Winter months. In the evening light, the pale brown colour of the feathers assumes a dull golden wash.

DISTRIBUTION. N. Africa, S. Europe and N. Asia to India. A regular but uncommon migrant to Saurashtra and S. India during Winter.

FOOD. Same as Dusky Crag Martin.

DUSKY CRAG MARTIN

Gujerati Name—Gār Abābil

Hirundo concolor SYKES

SIZE. Slightly smaller than the Sparrow.

IDENTIFICATION. Upper-parts, muddy-brown; chin and under-parts, lighter brown; tail, square or very slightly forked. It has small white spots on the end-half of the tail which are clearly seen when spread. Sexes alike.

NOTES. Though seen in hilly country and on the sea coast throughout the year, the majority of these birds are found in pairs in the plains during the rainy season. The flight is a rapid wing-beat with a sudden opening of the wings while gliding. They make full use of air currents and glide well for a fairly long interval when there is a strong wind. While flying, they emit a short *kit-kit* but, on the whole, they are silent birds. They are not very shy and often seen roosting

in verandas. The Crag Martin, as the name implies, prefers rocky cliffs. However, it is equally at home in the plains and on the sea coast where it is found in fair numbers.

DISTRIBUTION. Most parts of India including Gujerat and Kutch and the whole of Saurashtra. Resident but prone to local movements.

NESTING. I have seen them breeding from June to November and again in February. The nest is made of mud which is plastered on perpendicular walls or under the shelter of roofs or overhanging rocks. They often nest inside a veranda or under a window. Soft mud is gathered from the ground by both the birds and carried in the mouth to the nest. The nest is small with just enough room for the parent bird to sit comfortably. The eggs number three to four, and are pointed at one end and white with reddish-purple spots.

FOOD. Small insects taken on the wing.

COMMON SWALLOW

Gujerati Name—Dérāsari Abābil

Hirundo rustica LINNAEUS

See Coloured Plate 30.

SIZE. About that of the Sparrow.

IDENTIFICATION. A delicate bird with long slender wings and very deeply forked tail. Upper-parts, dark glossy-blue, with a reddish-brown patch on the forehead and chin. Under-parts, white, with dark blue upper-breast. These birds are normally found in large flocks of 100 to 500. They are generally seen either flying swiftly or sitting on telegraph wires. The pose, when seated, is always vertical. Sexes alike.

NOTES. I have noted these birds arriving as early as July. At this time, however, they are starting to moult and this gives them rather a shabby appearance. This Swallow is a great traveller. Flocks may be seen at one place in hundreds and the next day they may all have disappeared. When migrating, large flocks may be seen to congregate in a place for a few days before leaving, and then another batch takes their place. September and October are the months when these birds are seen in very large numbers, especially along the sea coast. And yet one may come across birds flying low and hugging the ground against the wind in almost single file on the coastal belt. At times, it makes one think that they prefer flat ground. They do not keep to any particular area for long. The migration route is from north to south, and they return by the same route. We see such flights throughout the Winter months. On the sea coast, some birds

can always be observed coming and going. They are, in truth, but passengers, stopping only for a short time. How they can incessantly fly against a strong wind for miles is amazing. They often swerve while flying to catch small insects on the wing.

DISTRIBUTION. Breeding in Europe, N. Africa, Asia and the Himalayas, and migrating south to India and Ceylon. Common migrant to Kutch, Gujerat and the entire Saurashtra. Arriving in July-August and returning about March-April.

FOOD. Insects on the wing.

WIRE-TAILED SWALLOW

Gujerati Name—Lésharā Abābil

Hirundo smithi filifera STEPHENS

See Coloured Plate 22.

SIZE. Same as the last.

IDENTIFICATION. Recognised by the chestnut crown; upper-parts, bright dark glossy-blue though lighter than that of the Common Swallow. Under-parts, pure white. The outer tail-feathers are greatly prolonged and wire-like. But when the bird is in moult, these feathers are dropped. The flight is very graceful and the bird seems to float in the air. It flies much nearer to the water than any other Swallow or Swift, and glides against the wind with ease. These birds are often seen swinging back and forth in the wind with amazing speed. They are definitely more attracted to the proximity of water. They are seen in pairs or in families of four to five birds together. They are never found in large flocks as is the case with the migratory Common Swallow. Sexes alike.

NOTES. In bright sunlight, the blue on the back and upper-parts makes the bird look very beautiful. The white of the under-parts is conspicuous as are the two long wiry feathers of the tail. The call is a sharp note uttered sometimes in flight. While nesting the birds keep flying up and down close to their nesting site. Lakesides, rivers and streams are ideal places for finding them.

DISTRIBUTION. Resident almost throughout India including Kutch, Gujerat and the whole of Saurashtra.

NESTING. There seem to be at least two seasons, one from December to March and the other from August to October. Some birds may, however, breed in odd months of the year. The nest is made of mud which is plastered under bridges

over water. The site is, therefore, usually concealed except where one can walk under the bridge. Railway bridges over streams and rivers, road bridges under similar conditions, water weirs and boat-houses are ideal sites. The birds are not shy while building or nesting, but they are careful not to enter the nest while being closely observed, for they often fly ten to fifteen times past their nest before suddenly entering it and thus disappearing from view. The nest is cup-shaped in which three to four white eggs with reddish-purple spots or markings are laid. They are generally difficult to reach.

FOOD. Minute insects taken on the wing. They do not seem to roam very far from their favourite roosts.

INDIAN CLIFF SWALLOW

Gujerati Name—Bhékhaḍ Abābil

Hirundo fluvicola BLYTH

SIZE. Slightly smaller than the Sparrow.

IDENTIFICATION. Head, dull reddish to brick-red. Wings and back, dark glossy-blue; rump, grey-brown; tail, bluish-brown but not spotted. Under-parts, whitish; chin and upper-breast, having black streaks. Sometimes the lower-parts have a fulvous tinge. Bill and legs, black. This Swallow can easily be confused with the Common Swallow but it can be distinguished by the absence of white spots on the short tail and by a light coloured breast. Like all Swallows, it is either on the wing or perched on telegraph wires. It is found in small flocks and, though not very rare, it is seldom seen. Sexes alike.

NOTES. Migrations of these Swallows are usually seen during the Monsoon, when they are in moult. Sporadic occurrences of these birds may occur from June to February. The student should not confuse this species with the rare House Martin by the whitish rump patch which appears almost conspicuous.

DISTRIBUTION. Ranges from Kashmir to Madras. It is said to be fairly common all over India. I consider it uncommon in Saurashtra, and it appears to be a migrant in most parts of the State though found breeding at Ranjit Sagar, Jamnagar. Found in Kutch and Gujarat.

NESTING. The Cliff Swallow is supposed to breed twice a year, from January to March and from July to October, although eggs have been taken in every month of the year. The birds build in colonies and the site selected may be cliffs, under bridges, weirs, houses and eaves of buildings. The nest is characteristic of the species in being retort-shaped and has a tubular entrance.

It is lined inside with grass and feathers. The eggs number two to four, generally three, and vary in colour from pure white to whitish, spotted with yellowish or pale reddish-brown spots.

FOOD. Insects taken on the wing.

SYKES' STRIATED OR RED-RUMPED SWALLOW

Gujerati Name—Kénchi Abābil

Hirundo daurica erythropygia SYKES

See Coloured Plate 30.

SIZE. About that of the Sparrow.

IDENTIFICATION. Upper-parts, dark blue but chestnut or reddish-brown behind eyes and side of neck to nape. There is a conspicuous patch of reddish-brown on the rump which readily identifies the bird. A patch of mixed white feathers is often seen behind the neck. Lower-face, chin and under-parts, off-white mixed with a pale wash of rufous. Upper-breast, finely streaked with brown. The tail is forked. Absence of white spots on the tail. These birds are found everywhere but uncommon in the plains during the hot months. They are, however, seen in hilly country in pairs. They are not shy and may be seen entering houses, and yet they are not as domestic as our Common House Swift or Crag Martin. They emit a sharp call, viz., *which-which*, and also a frog-like croak. They also have a short musical song during the breeding season. At this time the male may be seen displaying in the air and then suddenly alighting on a slender twig or branch where his mate is perched and uttering a short musical song. Sexes alike.

NOTES. These birds are seen fairly plentifully at the end of the Monsoon and during the Winter months in small irregular flocks. They are also observed on the seaside while migrating locally. The flight is not so rapid as that of some of the other Swallows; the birds are seen flying in circles and turning sharply rather than in a continued straight flight. They may be seen flying most irregularly in the same locality for days together but never for a long period. They are also seen making short flights to capture insects and returning to their perch to repeat the same performance. This behaviour is, of course, mostly observed during the breeding season.

DISTRIBUTION. India including most parts of Saurashtra, Kutch and Gujerat. Resident and fairly common.

NESTING. Season—April to September. The birds prefer a slightly cooler area to breed in rather than the hot plains during the Summer months. They

nest close to lakes; wooded areas amongst hills where there are large rocky crags are ideal places. In the Gir, they are seen breeding near the summits of hills and amongst rocky crags in deep valleys. They nest separately and not in colonies. They build close to habitations, however, after the rains have commenced, and in August-September nests may be found under bridges on main roads almost inside cities. In forested areas, the birds are shy. They come down to the wet muddy sides of streams to collect mud which they take in their mouth for nest-building. I sometimes found nests lined with grass and scanty feathers. A pair that I saw in the Gir was collecting dry grass from a particular patch on the side of a hill. The nest has a tubular entrance and the egg-chamber is bulbous. Those in the hills are usually placed under a rocky ledge, often inside a small cave. The tubular entrance is not always completed. Three to four pointed white eggs are laid, three forming the normal clutch.

FOOD. Insects taken on the wing. Lakesides are favourite feeding grounds. These birds often circle fairly high up, the forked tail recalling that of the Kite. They also have the unique habit of taking insects and then returning to the branch like a Flycatcher.

RED-VENTED BULBUL

Gujerati Name—Būlbūl

Pycnonotus haemarrhus pallidus STUART BAKER

See Coloured Plate 29 and Plate 46.

SIZE. Somewhat smaller and slimmer than the Myna.

IDENTIFICATION. This is one of our commonest birds and it is easily recognised by the red patch under the tail. The head is black with a slightly pointed crest. Upper-parts, blackish-brown. The feathers of the upper-parts are edged white. The tail-feathers are tipped white and conspicuous in flight. Lower-parts, from breast to vent, whitish. The call is a *whit-willum*, quickly repeated. It also has another call, rather a harsh one like a *wik-wik*, which is often repeated and signifies alarm. When seated, the pose is upright. Sexes alike.

NOTES. The Bulbul is found everywhere, sometimes in pairs and sometimes in small groups. It is a well known garden bird. The birds are also encountered feeding separately. They are active birds and have keen eye-sight. They are good sentinels for all other bird life whom they warn by their distinct alarm calls on the approach of birds or animals of prey. During Winter one may often come across small groups of Bulbuls beyond their breeding habitat.

DISTRIBUTION. India including Kutch, Gujerat and the whole of Saurashtra. Resident.

NESTING. Season—February to October. Most nests are found during the Monsoon. The nest is a well-made cup consisting of grass fibre and cobwebs, and generally lined with hair. The site of the nest varies enormously. Though preferring hedges of all kinds, the birds also place it on the slender branches of trees, usually well-hidden amongst a bunch of leaves. Rarely does one find the nest high up on large trees. Some birds, close to habitations and gardens, will even have the courage to nest inside a house, and I know of one nest which was built in a chandelier in a drawing room. The nests are not difficult to find, especially when the birds are building them, for both simultaneously fly to their nesting site. However, once the birds start incubating, the nest is seldom discovered, it being well-concealed by foliage as is the case during the Monsoon. Nevertheless, a good indication of the nest-site is revealed by one bird keeping a close guard over or near the nest, and by attacking other birds such as the Tree Pie. The eggs number three to four, have a white ground colour and are marked with reddish-brown blotches, more on the broad end. Sometimes the ground colour is pale pinkish-white. Some eggs are heavily marked. The incubation lasts about 14 days. The courtship display of this bird is attractive. The male spreads-out its wings above its head and slowly flutters them up and down while the tail is spread-out and at the same time depressed.

FOOD. Insects, fruit and berries.

WHITE-EARED BULBUL

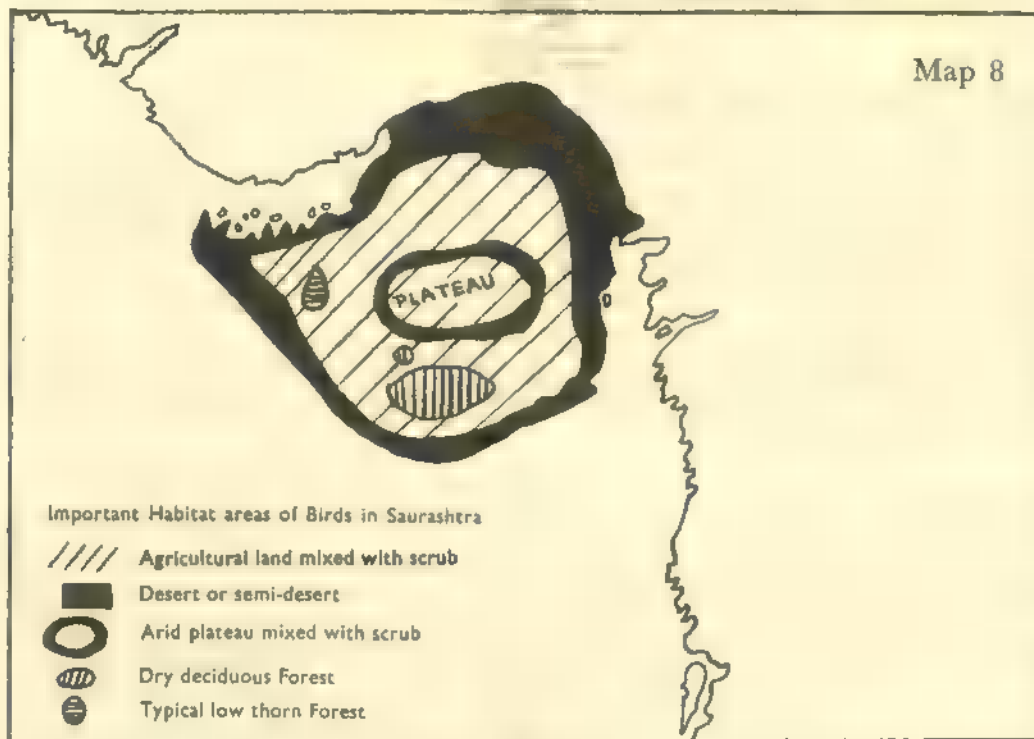
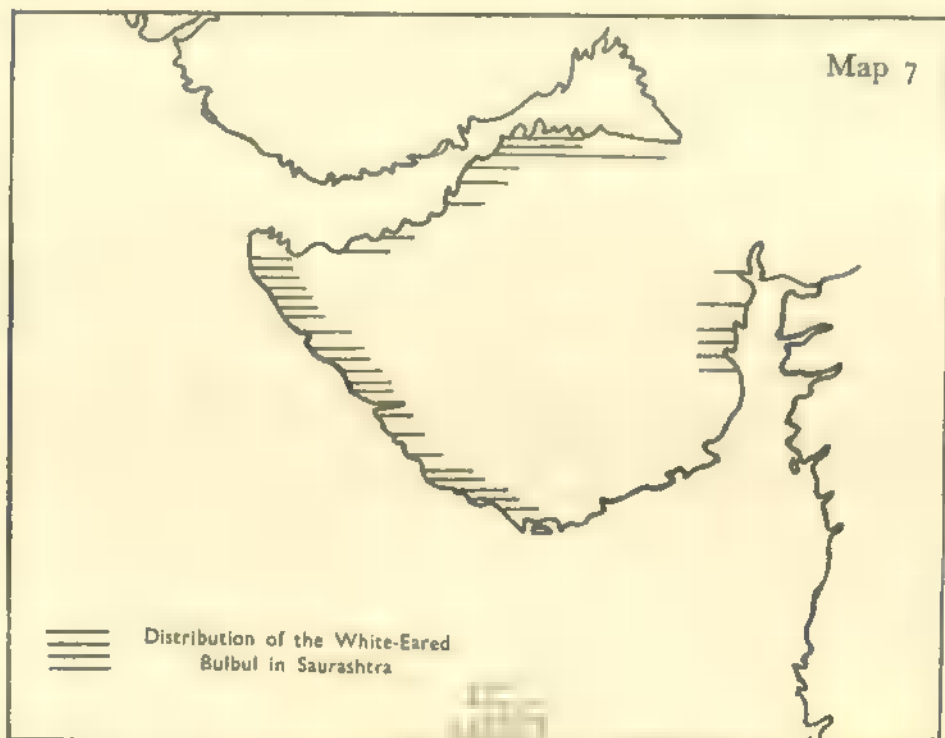
Gujerati Name—Kanarā Būlbūl

Pycnonotus leucogenys leucotis GOULD

See Coloured Plate 29.

SIZE. Same as the Red-vented Bulbul (slightly smaller).

IDENTIFICATION. Distinguished from the Red-vented Bulbul by having a white patch on the cheek and a pale yellow one under the tail. There is no actual crest but it has a small tuft of feathers on the head which is black. The upper-parts are uniform purple-grey. The birds are usually seen in pairs but during the post-Monsoon and Winter months small parties may be observed in non-breeding areas. In habits, the bird resembles the common Bulbul. It is found in gardens, the jungle and the coastal belt close to vegetation. The call is slightly on a higher and softer pitch and more quickly repeated than in the common species. Sexes alike.



NOTES. This Bulbul prefers a cooler climate and wanders inland during the Winter months. It is more commonly met with on the coast.

DISTRIBUTION. India including Saurashtra, Kutch and Gujerat. Resident and local migrant. The distribution of this bird is interesting. It is met with in various places on the coastal belt, being absent where it would appear most likely to occur. It is found in Porbandar, N. W. Saurashtra, the edge of the Little Rann close to Dhrangadhra, Mangrol, parts of Junagadh and in secluded areas of Gohilwad (See Map 7). During the Winter months I have regularly observed it in Bhavnagar and inland; also in Dhrangadhra.

NESTING. Season—April to October. The nest is similar to that of the Red-vented Bulbul but the eggs are slightly smaller on the average. It is a regular breeder in Porbandar and Mangrol; in the latter place it is seen nesting in the Euphorbia forest, now almost destroyed. The eggs usually number three.

FOOD. Insects and fruit.

COMMON IORA

Gujerati Name—Shobingā

Aegithina tiphia tiphia LINNAEUS

SIZE. About that of the Sparrow.

IDENTIFICATION. The male, a very handsome little bird, is bright golden-yellow with a black cap on the head. Back and upper-parts, mixed with black and golden-yellow. Tail, black, slightly tipped with white or yellow. Wings, black with two white stripes on the wing-coverts. From eye to vent, bright golden-yellow which during Winter becomes greenish-yellow; the black cap almost disappears at this time. The female is greenish-yellow without the black cap and her wings are browner. Bill, grey to blackish. Legs, black. The male bird has an attractive song like a *tee-tiu-tee* and also utters a Sparrow-like call.

NOTES. The Iora affects scrub jungle and open country where there are trees. It seems to be more of a seasonal bird, arriving in April and May, when it assumes full plumage, and emigrating into other parts about October. It is occasionally seen during the Winter months. During the breeding season, the courtship flight is interesting. The cock flies up vertically into the air and then glides down with outspread wings and tail, and the feathers distended resembling a puffed ball. While displaying, it usually alights on a branch of a bush or tree. It is not very shy, often entering gardens though it prefers wooded areas.

It is commonly seen during the hot months and the Monsoon. The rainfall seems to attract the birds and they quickly begin to breed at the break of rains or just before.

DISTRIBUTION. Throughout Saurashtra and most parts of India. Resident and local migrant.

NESTING. Season—May to October. The bird makes a very neat nest which looks as if it is plastered on to a branch or stuck on a fork. It is one of the best made cup-nests that I have seen and is invariably fixed firmly with cobwebs and fine grass. The nest is well-camouflaged, blending with the bark of the tree on which it is built. Its favourite thorny tree is the 'Gorad' (*Acacia senegal*) which has a white bark. The 'Herma' (*Acacia leucophloea*) is also another thorny tree commonly used for nesting. The eggs number three and are cream coloured with reddish-lavender splashes. Both sexes incubate and allow fairly close approach. The nests are placed not very high up, some being within reach, others a few feet out of reach. Although I have found many nests quite close together in one area, I have never found more than one nest on the same tree. Most nests are built after the first rains and some just before.

FOOD. Small insects, spiders and caterpillars.

CENTRAL INDIAN IORA

Gujerati Name—Madhya Bhārati Shobingā

Aegithina tiphia humei STUART BAKER

See Coloured Plate 29.

SIZE. About that of the Sparrow.

IDENTIFICATION. Differs from the Common Iora in being much more uniformly black above; it is recognised by the tail being entirely black in the male. The call is also distinguishable in being much sweeter and resembling the whistle of a school boy. It is a sharp whistle. This bird is reminiscent of a female Orange Minivet. It adheres to mixed deciduous forest areas and straggles out of it into thorny forests and well-shaded areas. In habits it resembles the Common Iora though it is much shyer.

NOTES. The bird is usually seen singly or in pairs in forested areas and the call, a sharply repeated short whistle, is frequently heard during the breeding season.

DISTRIBUTION. Confined to the Gir Forest and the Girnar where it is common and resident, but sometimes seen in the Barda Hills; it occasionally

straggles into other parts of Saurashtra. It is also found in Central India and Gujerat where it is widely distributed.

NESTING. Similar to the last species. The incubation takes about 14 days.

FOOD. Insect life.

MARSHALL'S IORA

Gujerati Name—Marshall-nō Shobingā

Aegithina nigrolutea MARSHALL

See Coloured Plate 29 and Plate 46.

SIZE. About that of the Sparrow.

IDENTIFICATION. Differs from the Common Iora in having conspicuous black and white feathers on the wing-coverts and the tail-feathers broadly tipped with white and, in some, proceeding upwards to the centre of the tail. The male is bright golden-yellow below and on the back, the latter mixed with black. The black cap is present. The female differs in being much more greenish-yellow above with the same conspicuous white patch on the wing-coverts and white on the tail. During the non-breeding season, both sexes assume a greenish-yellow plumage, the male often retaining a darkish patch on the nape; otherwise the sexes appear to be the same. The moult takes place during the Winter months.

NOTES. This bird appears to be an erratic breeder. It is a local migrant into Saurashtra. I have found it in breeding plumage in Bhavnagar in September and October.

DISTRIBUTION. Resident in the drier areas of India including Kutch and Gujerat. Uncommon in Saurashtra.

NESTING. Same as the Common Iora.

FOOD. Insect life and their larvae.

COMMON WOOD SHRIKE

Gujerati Name—Kāṇṭhō Lāṭorō

Tephrodornis pondicerianus GMELIN

See Coloured Plate 25.

SIZE. About that of the Bulbul.

IDENTIFICATION. This is a dark ash-greyish brown bird with a white supercilium and a dark broad black face-band. Chin, white with a patch of grey on the breast. Rest of under-parts, white. Bill, brownish at the base and tipped black with conspicuous hairs near the nostril which are called rictal-bristles. The outer tail-feathers are white and only observed distinctly during flight. Legs, black. In habits, it would seem to resemble more the Flycatcher family, or even the Drongo, for it is fairly active on the wing. The most outstanding feature by which it discloses its presence is its typical whistling note like a *wōit-weet-weet-weet*. When once familiar with this call note, its identity is assured. The birds are found in scrub jungle, forest, thin thorny bush country and gardens. In flight, they somewhat resemble the King Crow, preferring to settle on higher branches of a tree where available. Sexes alike.

NOTES. Despite what its name implies, the bird is not always found in wooded country, and I have often seen it in open grassland studded with stunted trees. However, it prefers scrub jungle and forested areas where it is not uncommon. During the breeding season, it may be seen in the same area year after year. The body-pose is normally upright. The birds are usually seen in pairs quite close to each other; they are not really shy. During hot hours, they regularly come to drink at the same watering places.

DISTRIBUTION. Resident throughout India including Saurashtra, Gujarat and Kutch. Fairly well-distributed over the country. The Malabar Wood Shrike (*Tephrodornis gularis sylvicola*), found in South Gujarat, differs in having the head dark bluish-grey and the outer tail-feathers brown with rufescent tips.

NESTING. Season—March to July. It breeds generally during the very hot months. The nest varies according to habitat. It is found in open grassland and is placed on stunted trees; it is a fairly compact cup, and is situated in a fork of a branch. Amidst scrub jungles and forests, the birds prefer nesting on over-hanging branches of trees. The nest is then comparatively less well-made and plastered with cobwebs, although not always well-fixed. It is fairly shallow and made of grass and roots and mixed with cobwebs on the outer side. The eggs number three to four, and are cream-coloured and speckled at the broad end with greenish-brown.

FOOD. Insects. Catches most of its prey on the wing.

LARGE INDIAN CUCKOO-SHRIKE

Gujerati Name—Moṭō Kasiō

Coracina novaehollandiae macei LESSON

See Coloured Plate 25.

SIZE. Slightly smaller and slimmer than the Pigeon.

IDENTIFICATION. Male: Face, dark ash-grey. Head and upper-parts, grey. Breast, light grey. Rest of lower-parts, white. Bill and legs, black. Eyes, red. The female has less dark grey on the eye-streak and face, and has brown eyes and the breast and under-parts are barred grey instead of uniform greyish-white as in the male. The Cuckoo-Shrike is a bird which favours tall trees, generally perching on the topmost branches and living amongst thick foliage. It is a shy bird, often seen flying singly over the tree tops and emitting its characteristic and very harsh call by which it is easily identified. This call note is a true indication of its presence. While perched, it has an upright body-pose. The white rump patch is conspicuous in flight.

NOTES. These Cuckoo-Shrikes are local migrants during Winter and may be seen in large gardens amongst tall trees. They are also seen in plantations, fruit orchards and forest areas. They are rather restless in their behaviour, for they do not remain in one area for long. They have a habit of ruffling their wings when perched. They shun observation by keeping to dense trees and yet may be seen alighting on top of green as well as leafless trees. The call is emitted frequently while flying and also when at rest though more commonly heard during flight. The flight is a mixture of flapping and gliding. They are fairly shy birds even during the breeding season. In the outskirts of the Gir, however, I found them quite tame in the Winter months.

DISTRIBUTION. Practically all over India including Gujerat but absent from Kutch; well-distributed in Saurashtra. Uncommon; local but a regular migrant though some birds are resident, breeding in the Gir Forest.

NESTING. Season—April to June. The nest is usually built on an overhanging branch of a large tree; large leafless trees are often made use of, and the nest is at times quite conspicuous. The eggs number two to three and are greenish with large splashes of dark brown and purple.

FOOD. Large insect life.

BLACK-HEADED CUCKOO-SHRIKE

Gujerati Name—Kālā Māthānō Kasiō

Coracina melanoptera sykesi STRICKLAND

See Coloured Plate 25.

SIZE. About that of the Bulbul.

IDENTIFICATION. Male: Head, neck, upper-back and breast, black. Lower-back to rump, grey. Tail, dark ash-grey. Lower-breast to vent, white. Bill and legs, black. Eyes, reddish. The male can be confused with the male of the Magpie-Robin at a distance but may be distinguished from it by the greyer body and shorter legs. The female, from head to tail, is light grey. Lower-parts, white to greyish-white on the upper-breast, becoming lighter towards the vent. The faint cross bars on the breast and under-parts together with the lighter grey of the upper-parts and the brown eyes distinguish her from the male. The male has a beautiful unvaried song during the breeding season. At this time he is distinguished from the male Magpie-Robin by his more upright pose. This bird is well-distributed over the country as a local migrant during Winter, generally preferring tall foliaged trees, gardens and large forest trees where there is plenty of shade. It usually prefers alighting on tops of trees, and comes to the ground only occasionally.

NOTES. During the breeding season, these birds are rarely seen except in their nesting area (the Gir and the Girnar). They are usually seen singly and sometimes in pairs. They have a peculiar harsh note which is rather difficult to describe.

DISTRIBUTION. Found in most parts of India including Gujerat; uncommon in Saurashtra and absent from Kutch. I have found it breeding in the Gir Forest. It is prone to local movements.

NESTING. Season—May to August. The nest is well-concealed in the fork of a branch or on the bare branch of a large tree with which it harmonises perfectly. It is made of grass and cobwebs and is placed at a height of about 10 to 25 feet. The nest is built not far away from where the birds are seen courting. They prefer to nest on hillsides in forest areas. The eggs number three and are light creamy-grey, splashed with brown. These birds can stand extreme heat and can stay away from water for long periods.

FOOD. Insects and bark-inhabiting beetles.

DHARMAKUMAR'S SMALL MINIVET

Gujerati Name—Dharmakūmārsiñhji-nō Rājālāl

Pericrocotus peregrinus dharmakumari KOELZ

See Coloured Plate 25 and jacket.

SIZE. Slightly smaller and slimmer than the Sparrow with a longish tail.

IDENTIFICATION. Male: Head, neck and back, dark ash-grey. Throat, black. Breast, flaming orange-red fading into white towards the vent. Rump, orange-red. Tail, mainly black. Bill and legs, black. The bill is short and the tail is thin and longish. Some birds have more orange-red on the breast and are more brightly coloured while others are more whitish on the lower-breast and abdomen. The female differs from the male. She is light grey above and whitish below. Some birds have a pale yellowish tinge on the abdomen and flanks but the yellow-red rump patch in the female is more conspicuous. The dull orange-red patch on the wings of the male is replaced by dull yellow in the female. The general shape of this bird is thin and longish, the body tapering towards the tail. The birds are found mostly in thorny forest and hilly or flat country, rarely entering gardens except in the neighbourhood of forest. They are shy and active. Compared to *peregrinus*, the adult male in this race has blacker throat* like *malabaricus*; the flame-orange on the breast is deeper; there is generally more white on abdomen, and in size it is smaller. Compared with *pallidus*, it is darker and with the flame-orange more extensive on the under-side. In the adult female, there is only just a trace of yellow on the flanks and sometimes on the abdomen. In *peregrinus*, there is more yellow. The female of *pallidus* is practically devoid of yellow on the under-side.

NOTES. The male is a handsome bird with an upright body-pose. The birds are seen in pairs or in small groups in which the males are easily distinguished by their flaming-red breasts. They prefer secluded areas in hilly country which is thickly wooded, but not necessarily so. They seem to have a predilection for thorny trees from which they get most of their food. While moving, they emit a short high pitched whistle which, when once properly recognised, immediately reveals their presence. I have always depended upon the call note to locate these birds. They are prone to local movements and I have seen them in places on the coast far from their natural habitat. I remember seeing some birds which remained for a day in a solitary Bunyan tree and resumed their migration the next morning. Nevertheless, in their natural habitat, they are resident and

* See American Museum Novitates, No. 1452, page 6.

keep strictly to their area. In the early morning and evening, the birds are on the move, feeding amongst the topmost branches and passing from tree to tree, frequently emitting their characteristic whistle of *seet-seet*. Birds in groups of five to fifteen are not uncommon and are sometimes comprised entirely of males in the non-breeding season. During the breeding season, they form into pairs. In the outskirts of the Gir, I found them quite tame in the Winter months.

DISTRIBUTION. Western India from S. Rajasthan to most parts of Saurashtra and possibly Kutch. Resident. It is prone to irregular movements during the non-breeding season. It breeds in thorny forest, mixed deciduous forest and large patches of 'Babul' jungle where birds are not disturbed by human habitations.

NESTING. Season—May to September. The nesting begins as soon as the Monsoon breaks. The nest is a very small neat cup and difficult to locate. It is normally placed high up in a fork of a branch and is practically invisible from below, appearing from the sides as a small knot. In areas where trees are stunted, the nest is found as low down as 3 to 8 ft. It is made of grass and covered by cobwebs so that it matches its background perfectly. Generally three eggs are laid. These are cream-coloured with reddish-brown spots forming a circle at the larger end. I have noticed breeding pairs nesting in the same area year after year. A key to the presence of a nest is the appearance of a single bird which does not wander very far from where it is first observed. Moreover, the return of a single bird to a patch of trees from where it was disturbed is a good indication of a nest being nearby. The female alone incubates but both parents feed the young. The male may at times be seen feeding the female close to the nest. The fledglings have ash-grey head and back with a reddish rump patch; the inside of the mouth is orange. A pair may become agitated by the close approach to a nest. Both parents feign wing injury by fluttering their wings, the male taking a greater part in it and coming close to the intruder.

FOOD. Minute insects and their larvae picked up from under small leaves, bark and branches, or caught in the air. In the Gir Forest, I saw these birds feeding mostly on the insect life of the 'Kher' (*Acacia catechu*) and small leafed *Acacia* trees. They often prefer to feed while on trees, where the bark is peeling or on the topmost branches. They are very active while feeding, calling and flying from one twig to another in a restless fashion and moving from tree to tree, often in single file. The brighter male bird reveals his identity first. During the breeding season I noticed that the birds fed the young on a small green grub or caterpillar which seems to be prolific soon after the rains begin.

WHITE-BELLIED MINIVET

Gujerati Name—Kābarō Rājālāl

Pericrocotus erythropygius JERDON

See Coloured Plate 27.

SIZE. That of the Sparrow with a longish tail.

IDENTIFICATION. Distinguished from the Small Minivet by its pied colouration in the male and being slightly larger. Upper-breast, melon-pink; lower-parts, white; the tail also has much white. There is much white on the wings forming a V-shaped design when seen from the rear. The black or dark blue of this species, when seen in bright sunlight, replaces the grey of the last species. The patch on the rump is ruby-red. The female has dark brownish-grey upper-parts without the bright patch on the breast, the rump being slightly paler. The call resembles that of the common Munia, a *cheep-cheep*, a whistle often reminiscent of the Wagtail's *tseep-tseep*. It also has a short sweet song. The male is indeed a very handsome bird and, when perched, keeps an erect pose.

NOTES. Lavkumar Khachar and Shivraj Khachar of Jasdan have recorded this species first in Saurashtra. The birds seem to prefer a dry zone amidst scrub jungle. I have seen them in the vicinity of Hingolghadh (Jasdan) and on the outskirts of the Gir Forest.

DISTRIBUTION. Drier portions of India. Common in Kutch, but appears to be restricted to the arid zone of Central Saurashtra. Further studies of the range of this bird would be interesting. It is resident in the Jasdan area.

NESTING. Season—June to October. It seems to prefer thin scrub close to the base of hills for nesting rather than thick patches of forest. The nest is slightly larger than that of the Small Minivet and is not usually placed very high up. The female alone incubates though both birds help each other in nest building and rearing the young. The fledglings have pale grey upper-parts with pale barring; a white patch on wings; no red rump patch; lower-parts, white; tail, tipped white. Inside of mouth, yellow, unlike that of the Small Minivet which is bright orange-red. I have noticed that the male bird often feeds the female while she is incubating.

FOOD. Minute insect life.

PARADISE FLYCATCHER

Gujerati Name—Dūdhṛāj or Tarwāriō

Terpsiphone paradisi paradisi LINNAEUS

See Coloured Plate 26.

SIZE. That of the Bulbul with a longer tail.

IDENTIFICATION. The male in full adult plumage has black head with a dark bluish sheen. Body and tail, white with black shafts on some of the feathers. The tail consists of two very long ribbon-like feathers, the rest being shorter. Bill and legs, lead to bluish-grey, but blackish in some birds. The female has blue-black head; the upper-parts are chestnut including the tail which does not possess the long feathers of the male. Lower-parts, white with ash-grey on the breast. The young male in its first year cannot be easily distinguished from the female but if carefully observed, it has less grey on the breast and is a brighter white on the under-parts. The male in the second year plumage has a longer chestnut tail. The male in the third year assumes white feathers on the upper-parts, thus becoming chestnut and white. This is a magnificent Flycatcher and one of our most graceful and beautiful birds. The body-pose is erect. While flying, the male has a very graceful appearance with the long tail-feathers flowing behind in the shape of an Indian sword; thus it gets the Gujarati name 'Tarwarīo', a swordsman; the wings appear short and rounded. In flight, the movements are quick and it has a full command over the body when in the air. The common call is a harsh *keek* from which its presence is immediately known. It also has a beautiful song during the breeding season which is repeated quickly in succession and sounds like a *peety-to-whit*.

NOTES. The Paradise Flycatcher prefers evergreen trees and is seen in gardens, forests and plantations. In spite of many ideal conditions in which to live, the birds have appeared in the driest areas on the coastal belt and inland where one would never expect them. This is apparent during the migration when small thorny thickets, large trees and small gardens afford a refuge. Normally, they are seen amidst well-watered and shady areas. In forest areas, they keep close to ravines and not very far away from water during the breeding season. On the whole, they are shy birds, residing in evergreen trees and keeping to the high branches from where they swoop down on flying insects, returning again to the tree or flying into cover. They are very active while feeding and one may see them take their prey from all angles. Their favourite sites are mango orchards and tall trees close to water. The birds are to be seen at odd times of the year, and their sudden appearance in gardens and forests is a real pleasure. The males breed while still in their chestnut plumage. During the breeding season, they are very active, singing and courting with

wings beating and the tail gracefully raised. The birds may be noted singing in flight and fluttering their wings pugnaciously.

DISTRIBUTION. Resident in most parts of India in two sub-species. Local migrant and resident in Saurashtra; fairly well-distributed during Winter except in much drier areas. It is fairly plentiful in the Gir Forest and Junagadh where it regularly breeds. It may breed in suitable places elsewhere. Many birds are seen at various stations on the Saurashtra coastline just after the Monsoon. They seem to migrate across the Gulf of Cambay fairly frequently. They are commoner in Eastern and Southern Saurashtra where they are seen throughout the year. The paler race *leucogaster*, a migrant to Kutch, occasionally visits Saurashtra during the Winter months and has been recorded in Bhavnagar.

NESTING. Season—May to August, June and July being the principal months. The ideal breeding habitat of these birds is in the Gir Forest and the Girnar. Once they have established their breeding territory, they drive away all other rival birds, the female often chasing away other females. During nest building, they are noisy birds and the site is easily revealed by the parent birds getting excited when approached. The site of the nest varies from six to about 25 feet high. The nest is well fixed on a branch or fork of a tree, being fairly exposed. It is made of grass and fibre smeared with cobwebs on the outside, thus matching the bark of the branch on which it is placed. In shape, it is a fairly neat cup. It is difficult to find but once seen, it is conspicuous. The parent birds quickly leave the nest as soon as approached except when hard set. Both birds incubate and take part in building, the female doing most of the work in the latter operation. The normal clutch of eggs is three to four. They are pinkish-white in colour with dark spots of reddish-brown on the broader end. They somewhat resemble Drongo's eggs. Most nests are built in trees, in or near ravines and, occasionally, on flat ground in forest areas away from the ravines.

FOOD. Insects, invariably taken on the wing.

BLACK-NAPED FLYCATCHER

Gujerati Name—Bhūrō Mākhimār

Hypothymis azurea BODDAERT

See Coloured Plate 23.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Male: Forehead, chin, nape and fore-neck, black. Rest of head and side of neck, azure-blue; very brilliant when seen in sunlight. Upper-plumage and tail, deep blue. Breast, bright blue, becoming whitish from lower-breast to abdomen. Eyes, brown; eye-lids, blue. Bill, black to bluish. Legs, slaty. Female: Slightly browner on the back and on the upper-plumage, and her breast is more ash-blue with the rest of the under-parts white. She is reminiscent of the White-bellied Drongo. The body-pose is erect while perched.

NOTES. It has been recorded at Chānch on the Gohilwad coast, Saurashtra, amongst 'Babul' thicket, and Mr. Sālim Ali has recorded it at Dwarkā, Western Saurashtra. Here it was seen in Euphorbia jungle.

DISTRIBUTION. A resident in most parts of India but a rare straggler into Saurashtra; not found in Kutch.

FOOD. Insects. It is not known to descend to the ground for feeding.

RED-BREASTED FLYCATCHER

Gujerati Name—Chaṭki Mākhimār

Ficedula parva BECHSTEIN

See Coloured Plate 26.

SIZE. Somewhat smaller than the Sparrow.

IDENTIFICATION. This is a very small bird of compact shape. The upper-parts are pale brown and the tail is blackish with a few white feathers. The under-parts are creamy to pure white with the upper-breast having a rusty-red spot. Some birds have the red on the breast more extensive than others, and have a greyish tinge on the crown. The bill and legs are black. The female differs from the male by the absence of the red spot. This attractive little bird is seldom noticed though fairly common. It is very active, and is frequently seen flying down to the ground to pick up some small insect or swiftly flying from some tree to take it up in the air, then returning to its perch. Its habit of staying amongst green trees and its restless movements prevent one from seeing

it for any length of time. It is, however, a bird which can be observed with binoculars without much difficulty. It has rather a soft rapid note which sounds like a *tik-tik-tik* or *chirrrrr*. It also has an attractive little song.

NOTES. These birds are seen in gardens, forests, cultivation and well-shaded areas. They are solitary and, although migratory, keep to same areas once they have established themselves, regularly visiting the same trees. Mango-orchards and trees of that size are favourite sites from where they watch out for food. Their quick movements on the wing while taking food, and their sudden appearance on the ground and back again, are characteristic. These spurts are often accompanied by a sharp trilling whistle. The birds arrive soon after the Monsoon and are seen throughout the Winter months till April.

DISTRIBUTION. Migrating to India from Europe and Siberia. Fairly common in Saurashtra, Kutch and Gujerat.

FOOD. Minute insect life, *e.g.*, diptera of all kinds.

TICKELL'S FLYCATCHER

Gujerati Name—Adharanga

Niltava tickelliae tickelliae BLYTH

SIZE. About that of the Sparrow.

IDENTIFICATION. Male: Head and upper-parts to tail, dark blue, brighter above the eye and on the wings. Lower-parts, from throat to breast, dull orange-red. Under tail-coverts and abdomen, whitish. Bill and legs, black. The female differs from the male in being slightly paler. This beautiful bird lives in shady areas such as forests, gardens and plantations, and amongst farms and orchards. Like most Flycatchers, it is a very active bird, flying in short spurts after small insects. It often comes to the ground to pick up insects out of dry leaves. It has an attractive song, reminiscent of the Blackcap, slightly metallic in tone and in a higher key than that of the Magpie-Robin. It is interesting to note that these two species prefer the same habitat and are thus often seen fairly close to each other. This Flycatcher is not a very shy bird, allowing fairly close approach.

NOTES. These birds' ideal habitat is along river banks, streams and dry ravines where there is plenty of bushy undergrowth and green vegetation. They are usually found singly, but a pair may be seen not far from each other during

the breeding season. In this season the silent bird-watcher may see the male bird displaying to the female in characteristic manner. The male, while leaning on one side, raises the feathers of his head and back and vibrates them as if to attract the female. When in this pose, he keeps the body absolutely immobile. The display lasts a few seconds and the bird is then seen approaching closer in characteristic manner. While thus displaying, the tail is slightly spread and bent a little sideways. In Winter the birds spread out into the countryside and they are seen in 'wadis', gardens and groves. Their song, once recognised, is diagnostic.

DISTRIBUTION. Found in most parts of India including Gujerat but absent from Kutch. Well-distributed throughout Saurashtra as a local migrant but resident only in some areas. It breeds in the Gir Forest, Junagadh, the Girnar, the Barda Hills, and the valleys of the Shatrunjaya Hill, Palitana. The Gir Forest is its stronghold where it is fairly common (See Map 9).

NESTING. Season—May to August. In the Barda Hills, the site most often selected is a hole in the side of a wooded ravine, amongst rocky cavities, and in banks. Dry ravines, but with vegetation on the banks, are made use of before the rains. In the Gir Forest, the birds generally lay in holes in the banks of streams and dry ravines, and in cavities in trees. Some nests are found at the base of trees, others under rocky cavities. Nest sites in the Gir vary considerably as there is much choice of ideal locations. I once found a nest hidden between the bark and the trunk of a tree. I noticed that the birds generally nest in ravines not far from water. The nest is made up of dry leaves, lined with fine grass, the exterior often forming a mass of dry leaves while the interior is a neat cup. The birds nesting in holes go as deep as eight inches or a little more. Nests situated at the base of trees are well-camouflaged, usually under a canopy of well-foliaged trees and climbers, both mixed together, thus forming a mosaic of light and shade. While building, the birds do not appear to be very shy and it is then easy to find the nest, but once the eggs are laid it becomes difficult except by regular and careful observation. A pair of breeding birds keeps close to their nesting area and it is therefore fairly easy to locate the nest if the area is under continuous observation. The eggs number four to five and vary a little in colour; some are uniform olive-brown or brownish-yellow while others have a decided greenish-yellow tinge on a still lighter ground.

FOOD. Small insects taken on the wing or picked up from the ground. In the Gir, it dwells in the most mosquito-infested areas.

EASTERN SPOTTED FLYCATCHER

Gujerati Name—Khākhi Mākhimār

Muscicapa striata neumanni POCHÉ

See Coloured Plate 26.

SIZE. About that of the Sparrow.

IDENTIFICATION. Upper-parts, dusty-brown to khaki-grey. Under-parts, whitish. On the head there are fine, thin lines of dark-brown and a few fine streaks on the upper-breast which in some birds appear as spots. The body-pose is very erect when perched. The tail is slightly forked. The birds are seen on slender branches or wire, and are rather shy when approached closely. In flight they are very quick, catching minute insect life on the wing and returning to the same perch. They are seen in gardens and cultivation and also in forest. The call is a distinct *tick*, louder than that of the Red-breasted Flycatcher. Sexes alike.

NOTES. Because of its inconspicuous colouring, this bird may pass unnoticed; so the bird student must particularly look out for it in gardens or in the field during the Monsoon and Winter months.

DISTRIBUTION. Breeding from Persia to Kashmir, and migrating to India. Although a regular migrant, it is not very common in the Winter months in Saurashtra but fairly wide-spread over the country.

FOOD. Mosquitoes, flies and small insects, usually taken on the wing.

GREY-HEADED FLYCATCHER

Gujerati Name—Rākhoḍi Piḷō Mākhimār

Culicicapa ceylonensis calochrysea OBERHOLSER

See Coloured Plate 26.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Head, neck and breast, ash-grey. Under-parts, yellow. Back and wings, greenish-yellow. Tail, brownish. This is a delicate and very active little bird found in gardens, plantations, fruit orchards and forests. It has a sweet song which it emits frequently. It is rather a shy bird keeping to well-foliaged trees and is seldom observed, being constantly on the move from one place to another. The body-pose, when seated, is erect. Sexes alike.

Map 9

Main breeding range of the
Tickell's Flycatcher in Saurashtra*

*This almost coincides with the breeding range of the
Kathiawar White-Eye (amabalis).

Map 10

Main breeding area of the following birds in Saurashtra:—

- | | |
|------------------------------------|--------------------------|
| 1. Indian Magpie-Robin | 5. Paradise Flycatcher |
| 2. Black-Headed Cuckoo-Shrike | 6. Indian Pitta |
| 3. Large Cuckoo-Shrike | 7. Crested Honey-Buzzard |
| 4. White-Browed Fantail Flycatcher | 8. Crested Serpent-Eagle |

NOTES. Being an irregular visitor, it is uncommon and rare in certain parts of the country. It does not remain in one area for a long time.

DISTRIBUTION. Breeding in Western and North Western India and a local migrant to Saurashtra during the Winter months. Not found in Kutch.

FOOD. Small insects taken on the wing.

WHITE-BROWED FANTAIL FLYCATCHER

Gujerati Name—Nāchāṇa

Rhipidura aureola aureola LESSON

See Coloured Plate 26.

SIZE. About that of the Sparrow.

IDENTIFICATION. Immediately recognised by the fan-shaped tail when spread-out and by a broad white supercilium commencing from the forehead to the nape. The upper-parts are blackish with small white spots on the wing-coverts and the tail which has long white tips except for the central feathers which are black. The legs and bill are short and black. Eyes, blackish. This is a delicate restless little bird with longish body; it is seen flitting from one branch to another, opening its tail and closing it, often at the same time spreading-out its wings. The tail is often spread-out while erect or depressed. It is a very fascinating bird to watch in gardens, forests and scrub jungle. Sexes alike.

NOTES. While feeding, it turns round from side to side, frequently uttering its musical call and spreading its tail like a fan. Its quick movements and the opening and closing of its tail may be for the purpose of flushing small insects from their hiding places. It takes much of its prey on the wing, often turning somersaults in the air. It is not really a shy bird, yet at the same time it does not hesitate to move out of view if constantly watched. During the cool hours, it may be seen singly or in pairs amongst the low branches of trees but as the hot hours of the day approach, it seeks shaded places and water. During Winter, the bird is prone to local movements and then it may be seen anywhere. Its occurrence on the sea coast amongst a few large trees has been recorded. On migration, it has been observed in the most unexpected places. However, it always prefers the proximity of fresh water and well-shaded areas such as gardens, fruit orchards, plantations and fairly well-wooded forests. During the Summer months, from April onward, it is restricted to its breeding range. Pairs usually keep together and have the habit of calling to each other in their typical short melodious note, viz., *chee-chee-cheweechee-vi*.

DISTRIBUTION. Resident in Western India; rare or absent in Kutch; found in most parts of Saurashtra during Winter, though rare in the drier parts. It is resident in the Gir Forest where it may be seen in fair numbers throughout the year.

NESTING. Season—May to August. The nest is a perfect example of camouflage as it matches exactly the branch on which it is fixed. It is usually built on an over-hanging branch quite open to view, and gives the exact appearance of a knot. It is made of grass and fibre, and is a neat cup. It is plastered and well-attached to the branch with cobwebs. The nests that I found in the Gir during the hot months were generally placed on the horizontal branch of Teak (*Tectona grandis*) where the bark had become grey, and on this background, though quite open to view, they were camouflaged excellently by the thick coating of cobwebs. They reminded me much of those of the Ioras but are slightly larger and less firm. While incubating the eggs, the bird may be clearly seen when closely approached, and at that time it is very interesting to observe its behaviour. Sensing that it is observed, it raises its crown-feathers, becomes absolutely motionless, flattens its neck out and presses the tail slightly downwards. If the nest is slightly above one's head, the sitting bird allows one to approach right under the nest itself. Some nests are placed within easy reach while others are slightly higher. Both birds incubate the normal clutch of three eggs which are cream-coloured, with a small ring of minute spots of brownish or pepper colour at the centre. Some nests are built close to the roadside in not a very thick forest while others are situated in ravines. They may be near water or fairly far away. The birds, disturbed off the nest, will return fairly quickly, and one should watch the nest patiently by keeping still. Tree Pies are their enemies.

FOOD. Flies, mosquitoes and other small insects, taken mostly on the wing; occasionally a bird settles on the ground. It has the habit of flushing small insects from the bark and from under the leaves, and quickly swooping to catch them flying. Every branch and twig is visited while searching for food before the tree is left. While hunting, the bird opens and closes its tail and wheels round frequently and droops its half-extended wings. The body-pose is generally horizontal.

SCIMITAR BABBLER

Gujerati Name—Vāpi Lalēḍō

Pomatorhinus schisticeps horsfieldi SYKES

SIZE. Between the Bulbul and the Myna.

IDENTIFICATION. Upper-parts, dark brown to reddish-brown on the sides. Lower-parts, white. Recognised by a white supercilium extending from bill to neck. Wings and tail, dark brown. Flanks and under tail-coverts, slate-brown. Eyes, brown to crimson. Legs, greenish. Bill, long and curved, conspicuous by being yellow, darker at the base. The call, viz., *krokant*, is distinct and once recognised is a real indication of the birds' presence. Sexes alike.

NOTES. The birds frequent hilly wooded areas; seen singly or in pairs.

DISTRIBUTION. Western India but very rare in Saurashtra; has been recorded in the Gir Forest.

NESTING. Season—December to May. The nest is round or dome-shaped and is placed on the ground near a bush and generally on the side of a ravine. It is made of grass, leaves and rootlets. The eggs number three to five and are white and translucent.

FOOD. Insect life, spiders and their eggs.

WHITE-THROATED BABBLER

Gujerati Name—Karamadi Lalēḍō

Dumetia hyperythra FRANKLIN

See Coloured Plate 27.

SIZE. About that of the Sparrow.

IDENTIFICATION. Upper-parts, dark olive-brown with reddish-brown forehead. Easily recognised by its chin and throat upto upper-breast being white, and by its short curved bill. Lower-parts, yellow-ochre to dull reddish-yellow. Tail, not very long. The birds are seen in pairs, though more usually in small groups, amongst thick bushes and undergrowth in a forest area. They prefer riversides and ravines and are not really very shy birds, though constantly on the move while feeding. Sexes alike.

NOTES. The birds roost in thick bushes and can be caught fairly easily just after sunset when they are very reluctant to leave their roost. The call is a

short whistle frequently uttered while moving. In the Gir, they seem to prefer the 'Karamdi' (*Caranda*) bushes and 'Jambuda' (*Eugenia*) trees and undergrowth close to streams.

DISTRIBUTION. The race *albigularis* seems to be fairly widespread in the Gir Forest and on the Girnar. Resident. (See Map 16.) It is also found in parts of Western India.

NESTING. Season—May to September. The nest is placed low or close to the ground in thick cover. It is made of grass and rootlets, the shape being round. Three to four white eggs with reddish splashes are laid. Dry or partly dry river beds with green vegetation is where most nests are found during the hot months. After the rains break the birds breed in bushes and low grass above the water level of streams.

FOOD. Insect life, seeds and fruit. They seem to be slightly faster feeders than the larger Jungle Babblers, being constantly on the move, but their habits of feeding on the ground are much the same.

INDIAN YELLOW-EYED BABBLER

Gujerati Name—Bhārati Pīlāṅkhvājō Lalēdō

Chrysomma sinensis GMELIN

See Coloured Plate 27.

SIZE. Slightly smaller than the Bulbul.

IDENTIFICATION. Upper-parts, including wings, dark-chestnut to reddish-brown. Lower-parts, creamy-white to buffy on the flanks. Tail, fairly long, same colour as the back. Recognised by the eyes being bright yellow and having an orange-red ring round them. The general appearance is that of a slim bird with a longish tail. It is active and is seen singly or in pairs in scrub jungle mixed with grass, and in reeds close to water. Sexes alike.

NOTES. On the whole, it is a shy bird resenting close approach. It prefers undergrowth as well as bamboo clumps on hillsides, but may be found in open scrub country during the Winter months. Although uncommon, it is fairly widespread. During the breeding season the bird emits a short but melodious song, and a quickly repeated *kich-kivichee*.

DISTRIBUTION. Most parts of India and Saurashtra, being fairly common in the Barda Hills, the Junagadh Gir and the Girnar. It is resident in the hilly scrub areas of Saurashtra. It moves locally during Winter.

NESTING. The nest is a beautifully built cup or inverted cone made of soft grass and fibre, usually well-bound with cobweb. The eggs number three to five and vary greatly in colour. (Refer to *Fauna of British India*, Vol. I, page 234.) The breeding season in Saurashtra is the Monsoon.

FOOD. Insect life. The birds may be seen in low scrub and grass while feeding.

COMMON BABBLER

Gujerati Name—Shéradi

Turdoides caudata caudata DUMONT

See Coloured Plate 27.

SIZE. That of the Bulbul with a relatively longer tail.

IDENTIFICATION. Upper-parts, khaki-brown to dusty-brown. Throat, greyish-white. Lower-parts, dusty-white. Bill, brown. Legs, pale yellow. Feathers of upper-parts, each having a dark shaft or black line. Tail, longish. It is also recognised by its twittering whistle which it utters frequently when sitting on a bush. It is found in open country, scrub jungle and in almost desert conditions where there are thorny or well-interlaced bushes. It is also widespread in grasslands, especially where there are stunted trees and bushes. The typical habitat of the bird is of two types, open flat plains studded with low bushes, and hilly arid country with stunted trees mixed with thorny bushes. Sexes alike.

NOTES. This bird seems to have a preference for 'Kerda' (*Capparis*) and 'Bordi' (*Zizyphus*) bushes and is often seen amidst 'Jeepta' in the desert districts. Like other Babblers, it is gregarious and keeps a sentry on guard while feeding on the ground. The flight is low and a gliding one with an intermittent flapping of the wings. This is specially observed when the birds fly from bush to bush. They are preyed upon by Hawks and small Falcons, but are not easily caught as they can move in and out of thorny undergrowth and bushes with ease; it then becomes a game of hide and seek. The birds all the time utter a short shrill whistle. So amusing is this to watch that it has given an incentive to falconers to train the male 'Shikra' to catch these birds.

DISTRIBUTION. The whole of Saurashtra and India. Resident.

NESTING. Season—February to October. The breeding season is a long period; most birds recorded by me have been found breeding between February and April, and then again after the rains have commenced, from July to October, odd birds laying as late as November and as early as January. The normal

clutch consists of four eggs, but three to five are not uncommon. The colour is a deep blue to greenish-blue. The nest is a neat cup, placed fairly low in a thorny bush and invariably in the centre. In this deep nest the bird is well-concealed while incubating, and often only the bill and tail can be seen. So firmly is the nest fixed and protected by thorns that it becomes impossible to reach the eggs without cutting the slender branches that protect it. The nest itself is made of grass and rootlets. The Pied Crested Cuckoo lays her eggs in this nest. I once observed it flying around a bush trying its utmost to seek entry into a nest containing eggs of the Babbler. I have also watched the same species making vain attempts to flush a bird that was incubating. It was interesting to see the Cuckoo beating her wings and making feverish attempts to sneak in, but finally she gave up and flew away to other 'Kerda' bushes in search of nests. The Common Babbler is parasitised by the Cuckoo from June to September.

FOOD. Insects and their larvae, seeds and berries.

GREY BABBLER

Gujerati Name—Lalédō

Turdoides malcolmi SYKES

See Coloured Plate 27.

SIZE. About that of the Myna.

IDENTIFICATION. This is a dusty-grey bird with fairly long whitish-grey tail. Lower-parts, dirty white. Bill, horny to yellowish-brown, but bluish at the base. Eyes, white to yellow. Legs, pale yellow to fleshy-yellow. The birds are usually seen moving in groups of five to twelve. They are found in dry forests, open country and gardens. This is a very common species and can be seen everywhere. The common call is a monotonous *lé-lé-lé-lé* which becomes a continuous chorus, often maddening to the ear. The song is commenced by one of the batch and is passed on until the whole group joins in. There is also a short alarm note. It is used mostly at the approach of Birds of Prey. As soon as this is uttered, the whole flock immediately seeks cover. Another chattering note is heard when the birds spy an enemy, generally on the ground, *e.g.*, mongoose, cat, etc. They often follow and mob their enemy. As soon as it disappears from view, they stop calling. Sexes alike.

NOTES. They have the habit of feeding on the ground amongst dry leaves and low vegetation, always keeping a sentinel to give the alarm of an approaching enemy. Nevertheless, they are much preyed upon by Hawks and wild

cats. However, the group is so united that if one member is caught, the others readily attack the intruder; to such an extent is this habit formed that while hawking with a female Goshawk or 'Bâz', I have seen these courageous birds attack my trained Hawk so vigorously as to make her release her prey which at the time was a hare. Similarly, 'Shikras' are compelled to release their prey by a party of Grey Babblers. They literally fall upon their assailant at the risk of being killed. Thus, trained Hawks are often able to catch two Babblers at a time provided the falconer reaches there in time. These birds have a habit of playing amongst themselves, as if they were wrestling on the ground, and while doing so their claws become interlocked making flight difficult, at which time they can be caught by hand. They often remain interlocked for quite a long time. During the breeding season, the birds usually separate into pairs.

DISTRIBUTION. Commonly found throughout the drier parts of India and Saurashtra. Resident.

NESTING. Season—March to November. Most birds breed during the hot months and the Monsoon, from April to August. The nest is made of twigs and roots, lined with grass. It is cup-shaped and not as neat as that of the Common Babbler. It is usually placed on a tree and is not always well-fixed. The eggs number four. They are broad, oval in shape and blue in colour. The Hawk Cuckoo regularly lays in this bird's nest as does the Pied Cuckoo.

FOOD. Insects, grain and seeds. Mostly insect life during the breeding season.

JUNGLE BABBLER

Gujerati Name—Vana Lalédō

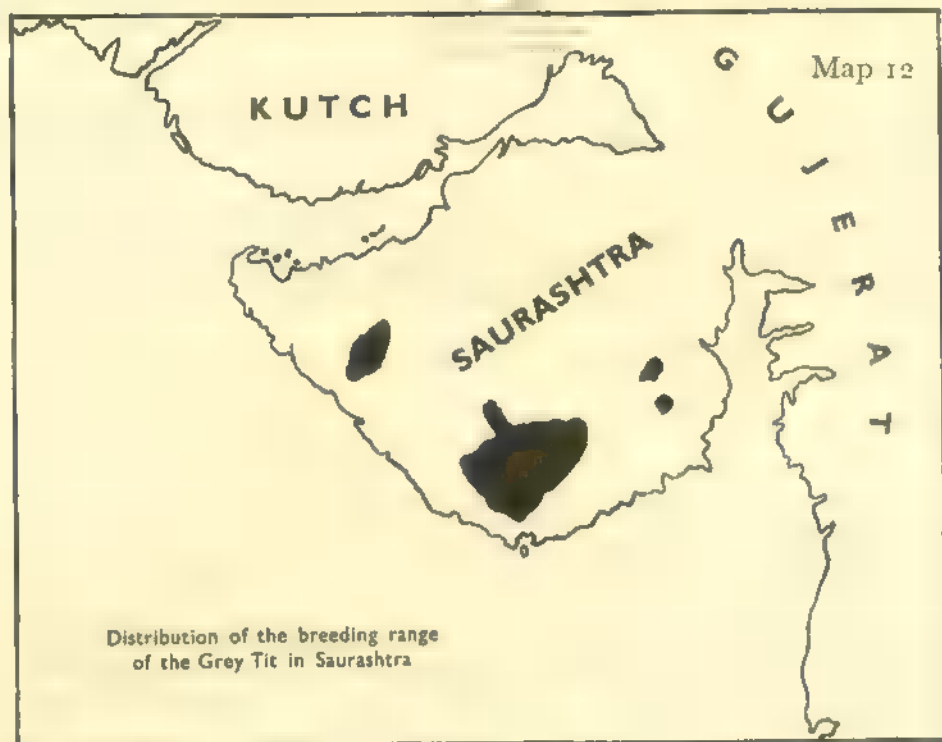
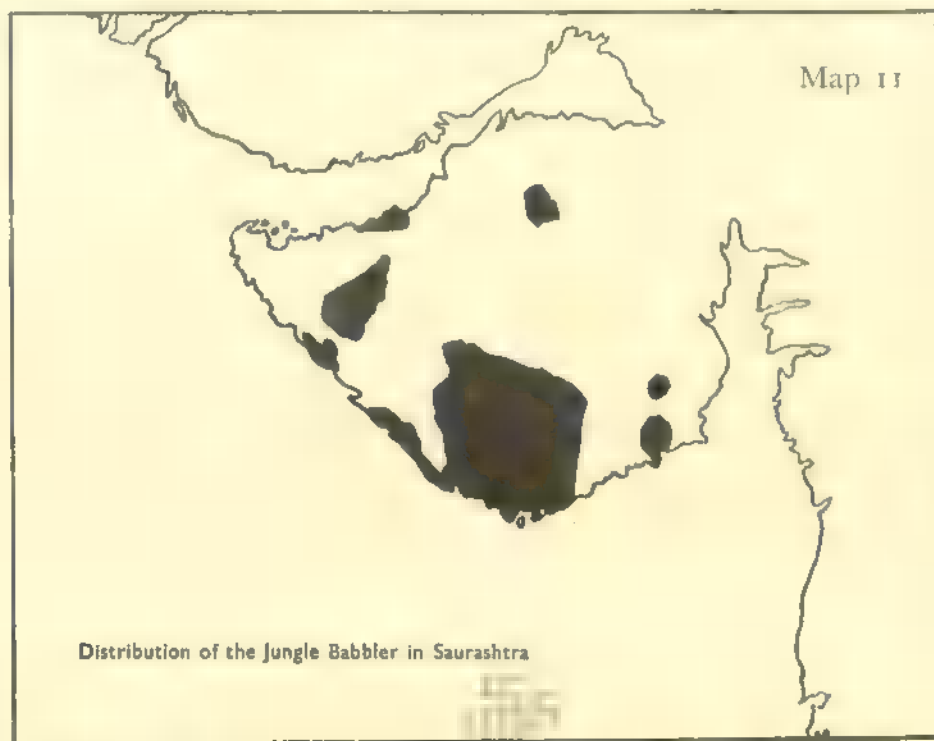
Turdoides somervillei SYKES

See Coloured Plate 27.

SIZE. About that of the Myna.

IDENTIFICATION. Colour, dirty greyish-brown with greyish upper tail-coverts and rump. The tail is about the length of its body and more reddish-brown than in the common Grey Babbler. Bill, yellow. Legs, brownish. Eyes, yellowish to white. It is seen in groups of five to ten, emitting a squeaky call. Sexes alike.

NOTES. These birds prefer low bushes and forest areas. They are often seen on the ground amongst fallen leaves, in shade and disruptive lighting.



They are found in groups but are also often seen in pairs during the breeding season. They are readily distinguishable from the Grey Babbler by their squeaky call, and by their browner and more compact body. The Jungle Babblers are noisy birds, calling frequently when feeding or alarmed. They are very alert while feeding, always keeping a sentinel on a tree. The birds have a habit of wheeling on a branch while ascending or descending. They make a frightful din on seeing a predator. When the sentinel gives the alarm of an approaching enemy, they immediately seek the cover of a bush or tree where they know they are safe and then begin calling furiously and puffing out their feathers.

DISTRIBUTION. Saurashtra and most parts of India. The distribution of this bird is interesting. (See Map 11.) It is found in the Gir Forest and the Girnar where it is abundant, and also at Mangrol, Porbandar, the Barda Hills, Wankaner, Jamnagar, Mahuva and Palitana in Gohilwad; some birds extend from South Saurashtra to Gondal. It seems to prefer hilly areas clad with forest, also the more humid areas. I have recorded it as a straggler at Chānch in a small 'Babul' thicket in October. The species is resident in fairly good numbers wherever found. Apparently absent in Kutch.

NESTING. Season—April to October. The nest is placed on low bushes and trees, also in clumps of Euphorbia. It is cup-shaped and made of twigs, rootlets and grass. The eggs number three to four and are blue. The Pied and Hawk Cuckoos lay eggs in these Babblers' nests.

FOOD. Grain, seeds, berries and insect life. These birds are generally seen feeding on the ground amongst fallen leaves and in low undergrowth. After feeding, they often indulge in dust-baths.

BOMBAY QUAKER BABBLER

Gujerati Name—Seetīmār Lalédō

Alcippe poiocephala brucei HUME

SIZE. About that of the Bulbul.

IDENTIFICATION. A drab looking brownish-grey bird of almost uniform colour. Eyes and feet, grey. Bill, dark brown. The birds are seen in small flocks and are known to be very active, moving in thick undergrowth and forest. The call is a whistle.

DISTRIBUTION. Most parts of India in a number of sub-species. E. C. Stuart-Baker, in the *Fauna of British India*, Vol. I, Page 278, gives the distribution as: "Mahabaleshwar, Western Ghats; from Rajkot in Kathiawar to Belgaum; the Central Provinces; Pachmarhi and Pareshnath Hills, Lower Bengal". Personally I have not come across this species in Saurashtra but outside.

NESTING. January to June. Refer to "Nidification of Birds of the Indian Empire", Vol. I, Page 246, by Stuart-Baker.

FOOD. Insect life.

SYKES' TREE-WARBLER

Gujerati Name—Râma Fûdki

Hippolais caligata LICHTENSTEIN

SIZE. Smaller than the Sparrow.

IDENTIFICATION. It is a uniform khaki-brown bird with the under-parts slightly paler or dirty buffy-white. A cream-coloured supercilium is present. Otherwise the bird is most unimpressive. It may be recognised by its sudden spurts after insects in the manner of Flycatchers, emitting at the same time a sharp *tick-tick*. It is a very active bird moving from branch to branch and looking under leaves for insect life, and flashing in and out to catch those on the wing. This bird seems to be not uncommon during the Winter and post-Monsoon season, visiting gardens, forests and cultivation. The second primary is longer than the seventh, with the first primary always short. There are three weak rectal bristles. Wing measurements: 59-64 mm. Total length: 132-137 mm.

NOTES. The birds arrive in October and November, and depart about February-March. They are usually seen singly in gardens, forests and cultivation.

DISTRIBUTION. Breeding from Central Asia and Turkestan to Pakistan and Northern India, and migrating during Winter into most parts of India including Saurashtra in which it is a regular migrant.

FOOD. Insects.

BOOTED TREE-WARBLER

Gujerati Name—Sitā Fūdkī

Hippolais scita EVERSMAAN

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Same as the last species but distinguished from it by the second primary being shorter than not only the seventh but sometimes even the eighth. In habits, also, it resembles the last species.

NOTES. Mr. Sálím Ali records this species at Ghātavad in Amreli district in Saurashtra. It occurs in other parts of Saurashtra, also.

DISTRIBUTION. Breeding in Eastern Russia to Western Siberia and Turkestan, wintering in India down to Ceylon. It is a migrant into Saurashtra.

FOOD. Insects.

INDIAN LESSER WHITETHROAT

Gujerati Name—Bhārati Nānō Shvétā Kanṭha

Sylvia curruca affinis BLYTH

See Coloured Plate 28.

SIZE. Somewhat smaller than the Sparrow.

IDENTIFICATION. A delicate, slender-looking little bird with the upper-head to a line just below the eye grey to dark-greyish; ear-coverts, often blackish, which immediately distinguish it from the Indian Whitethroat. Upper-parts, greyish-brown, with the tail browner. Central tail-feathers, tipped white, with the rest more broadly tipped and the outermost one entirely white. Chin and throat, conspicuously whitish. Rest of lower-parts, pale buffy-grey to oily-white, with the flanks greyish-white. Eyes, yellowish-brown; legs, grey. A miniature of the larger Whitethroat, it has, in general, the upper-parts darker and the lower-parts rarely buffy. In habits it resembles the next species with which it is often found together. The body-pose is horizontal and the top of the head gives a slight impression of having a pointed cap. The common calls are a *tuck* and a *churr*. Sexes alike.

NOTES. It is frequently found in thorny scrub jungle, hedges and open forests, also in gardens and cultivation. It is an active bird but rather shy, shunning observation if approached closely. Nevertheless, one may catch vivid glimpses of it while feeding in early mornings or afternoons. It is generally seen on the

move and, therefore, rather difficult to identify from other Warblers in the field. Trees such as 'Saragvo' (*Moringa*) when in flower and leaf attract these birds and other Warblers. They are also seen visiting the same thorny patches practically every day until the time for migration comes or, more commonly, when the food decreases. During the post-Monsoon and Winter months, they are fairly common. The Small Whitethroat (*Sylvia curruca minuta*) is also found with us and it is difficult to separate it from this sub-species. Mr. Sálím Ali mentions it as common in Kutch and says it differs in being somewhat smaller, with the upper plumage paler and more sandy-brown, contrasting with the pale bluish-grey of the forehead, crown and nape ("The Birds of Kutch," Page 34).

DISTRIBUTION. Breeding in Kashmir and Central Asia, and migrating south to India and most parts of Saurashtra, Gujerat and Kutch.

FOOD. Insects and nectar. The forehead often gets tainted with the pollen of flowers and I have often seen it with a greenish-yellow tinge of pollen.

EASTERN ORPHEAN WARBLER

Gujerati Name—*Moṭō Shvétā Kanṭha*

Sylvia hortensis crassirostris CRETZSCHMAR

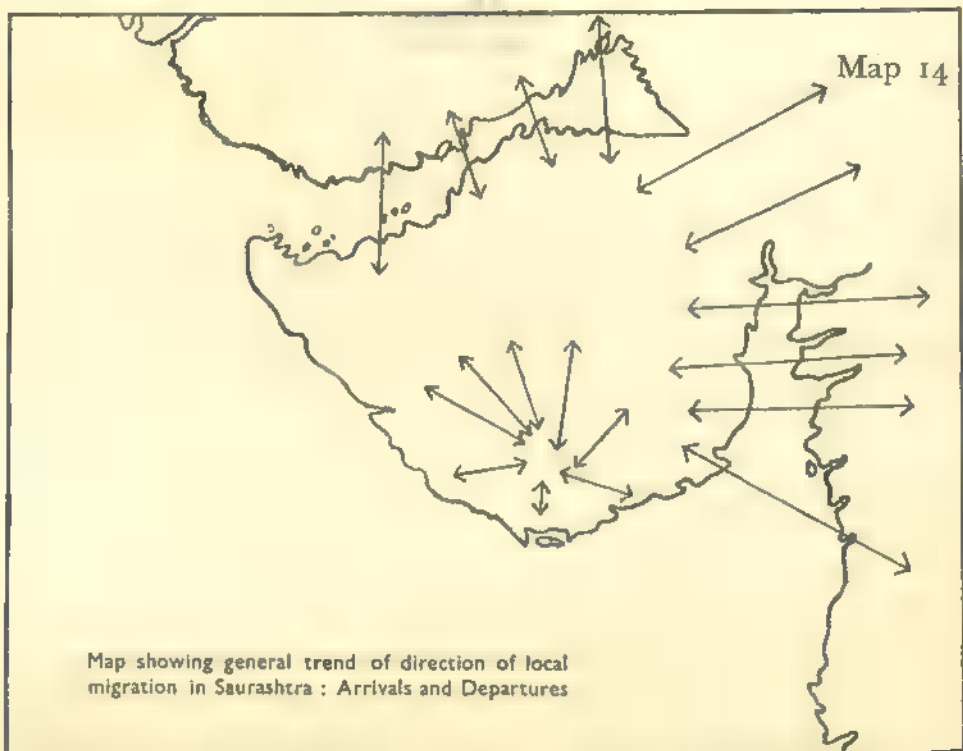
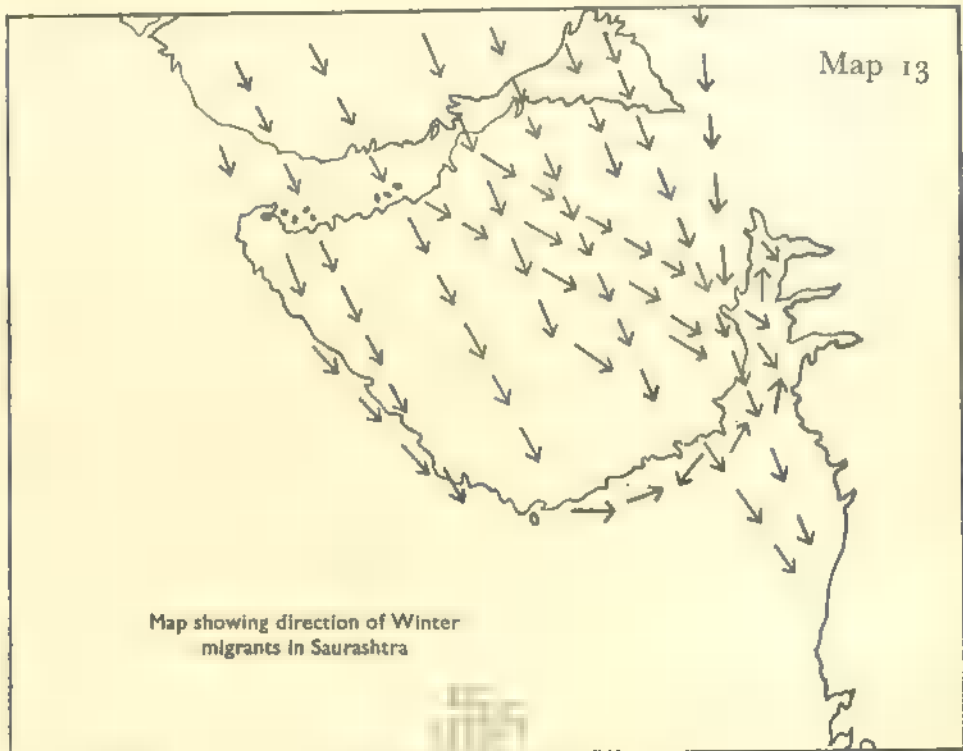
See Coloured Plate 28.

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. Upper-parts, grey with the head from the bill to the nape including the eyes almost black. Face and all under-parts, whitish. Bill and legs, black. Tail, grey and well-proportioned. The white ring round the eye is conspicuous. The body-pose is usually horizontal, and while moving amongst the branches, the bird may be seen in a crouching pose. This is an active bird and is seen mostly in 'Babul' growths and thorny scrub forests. It sometimes enters gardens and may be seen singly, hunting for insect life amongst the slender branches. While moving, the bird utters a call like *kuch-kuch-kucharr*. It has a beautiful song which may be heard before the birds leave in March or April.

NOTES. This is a fairly common bird, seen just after the Monsoon and even during the last Monsoon rains. Its dark black cap and grey body, with its larger size, soon distinguish it from smaller Warblers.

DISTRIBUTION. Breeding from South Eastern Europe to Pakistan, and migrating to India and south of its breeding range during the Winter months.



It is a regular Autumn and Winter migrant into Saurashtra, Gujerat and Kutch, and it is commonly found throughout these States.

FOOD. Insect life and fruit. 'Babul' groves are its favourite resort. It climbs up to high branches while feeding and is very active.

INDIAN WHITETHROAT

Gujerati Name—Bhārati Shvṛta Kaṇṭha

Sylvia communis icterops MENETRIES

SIZE. About that of the Sparrow.

IDENTIFICATION. This is a Warbler and it is characterised by a white ring round the eye and by the upper-parts being pure dark ash-grey with the upper-head, upto a line with the eyes, darker grey. The wings, reddish-brown. Lower-parts, whitish suffused with pale buff. The outer tail-feathers are white and may be seen clearly in flight. Eyes, brown. Bill, horny; lower-mandible, yellowish. Legs, brown. This little bird is seen singly amongst thorny scrub, forest, and cultivation where there are trees and gardens. It seems to prefer trees with small leaves where it may be seen actively moving from branch to branch in a restless manner. The general pose is horizontal. It has quite an attractive call, viz., *tuck*. Wing measurement: 72 to 78 mm. Sexes alike.

NOTES. These birds arrive after the Monsoon and stay throughout the Winter months. They have an elusive way of slipping in and out of slender branches and foliage.

DISTRIBUTION. Western Asia to India. Migrating into Saurashtra, Gujerat and Kutch in fairly large numbers.

FOOD. Insects.

EASTERN MOUSTACHED SEDGE-WARBLER

Gujerati Name—Shvétanépa Pān Tikṭiki

Luscinola malanopogon TEMMINCK

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Forehead to nape, black; a rufous-brown collar extends to or merges with the back which is streaked with dark brown. Wings and tail,

brown edged with reddish-brown; eye-streak, dark brown, but the supercilium is white and conspicuous. Lower-parts, pale buffy-white. Eyes, brown. Bill and legs, greenish-brown.

NOTES. Like the next species, this bird is often overlooked. It has been collected by Dr. Walter Koelz at Sihor, Eastern Saurashtra. It frequents thick patches of reeds where it is quite at home. It is likely that the species is a regular Winter migrant into Saurashtra, Kutch and Gujerat.

DISTRIBUTION. Asia Minor to Northern India including Saurashtra.

FOOD. Insect life close to water.

BLYTH'S REED-WARBLER

Gujerati Name—Blyth-nō Pān Tīktiki

Acrocephalus dumetorum BLYTH

SIZE. Somewhat smaller than the Sparrow.

IDENTIFICATION. This bird is a small edition of the Great Reed-Warbler. Upper-parts, olive-brown, sometimes with a tinge of rufous on the upper tail-coverts. Lower-parts, buffy-white. It has a faint supercilium which is pale buff. Bill, horny-brown with yellow lower-mandible. Legs, yellowish-brown or horny coloured.

NOTES. Although the bird frequents marshland, it is generally found in scrub jungle or amidst thorny trees away from water. It utters a sharp *tick tick* and also emits a soft musical song. It may often be confused with the Sykes's Tree-Warbler. The slightly longish pointed bill should be noted. This species had been overlooked by me but the bird was shown to me a number of times by Mr. H. G. Alexander. This Reed-Warbler does not appear to be an uncommon bird with us.

DISTRIBUTION. Eastern Russia to the Himalayas. In Winter, found in most parts of India extending to Burma and Ceylon.

FOOD. Small insect life.

PADDY-FIELD WARBLER

Gujerati Name—Kamodnō Tiktiki

Acrocephalus agricola JERDON

SIZE. Rather smaller than the Sparrow.

IDENTIFICATION. Slightly smaller than the last species and with olive-brown upper-parts suffused with rufous, and a reddish-brown patch above the tail. It also has a buffy-white supercilium much the same colour as the under-parts, while the chin is pure white. This bird is seen singly in reed-beds and always found close to water, such as small ponds, canals, river-beds and lakes where there are aquatic plants. Its common call is a *chik-chik*.

NOTES. It is fairly commonly seen after the rains and during Winter until April, and is often overlooked on account of its seclusive habits.

DISTRIBUTION. Breeding in most parts of Central Asia and the Himalayas, and migrating throughout India. A regular visitor to Saurashtra, Kutch and Gujerat during the Winter months.

FOOD. Insects. It is an active bird while feeding amongst reed-beds.

INDIAN GREAT REED-WARBLER

Gujerati Name—Pān Tiktiki

Acrocephalus stentoreus brunnescens JERDON

See Coloured Plate 28.

SIZE. About that of the Bulbul.

IDENTIFICATION. Upper-parts, olive-brown—more brownish than olive. Lower-parts, creamy to yellowish-white. Bill and legs, brown. Base of lower-mandible, yellowish. Eyes, brownish-yellow. It is a longish bird and recognised more by its habits and habitat than by its sombre colour. It is found in thick reed-beds and where there are plenty of rushes standing in water. It may be seen on the reed-stalks, moving from one patch to another and cleverly disappearing into thick reeds. While doing so, the bird emits a fairly audible *chuck*. It is also known to be a noisy bird during the breeding season. In flight it is fairly fast, darting from one thick patch of reeds only to lose itself in another. In the early morning, it may be seen climbing the reed-stalks and emitting a few of its characteristic harsh calls: *krāā* or

creek-creek-kiwi. It is well-distributed in areas where there is shallow water with thick reeds.

NOTES. The birds arrive soon after the Monsoon and they are plentiful during the Winter months, remaining with us, until well into Summer. I have never found them breeding with us but further investigation should be made and notes taken if they are found between the months of May and September as that is the main breeding season. However, as I have seen them crossing the Bhal desert in March, I presume they do not breed with us. The birds are generally seen singly, moving amongst the reeds, and one may easily find a dozen or more in a large patch. Canals, lakes and river-beds with the same environment will attract these birds regularly. They are active amidst the reeds in early mornings and evenings, shunning observation and keeping to the denser patches during hot hours.

DISTRIBUTION. Breeding from Western Asia to Kashmir and Central India. Migrant into Saurashtra, Gujerat and Kutch where it is widespread in watered areas. Fairly common during the Winter months.

FOOD. Insects caught from above, close to water and also picked up from the reeds.



CHIFF-CHAFF

Gujerati Name—Ja! Kitkit

Phylloscopus collybita VIEILLLOT

See Coloured Plate 25.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Upper-parts, uniform brown, with olive-brown on rump. Lower-parts, khaki to buffy-white, with a pale supercilium and a faint eye-streak. It is also distinguished by a yellow line on the edge of the wing when it is closed. This yellow portion is part of the under-wing and axillaries. The absence of the white on the outer tail-feathers separates it from the Sykes' Tree-Warbler. The Chiff-Chaff affects marshy as well as scrub jungle. It is an active little bird making short spurts to catch insect life, at times very close to the ground. As it makes these flights, the pale yellow under the wing is noticeable. Sexes alike.

NOTES. Seen in all types of vegetation. It is fairly common during the Winter months. The student should look for it close to jheels or lakes and in trees standing in water.

DISTRIBUTION. Most parts of India including Gujarat and Kutch and throughout Saurashtra as a Winter migrant coming from the North.

FOOD. Insects.

OLIVACEOUS TREE-WARBLER

Gujerati Name—Sādō Kīṭkīṭ

Phylloscopus griseolus BLYTH

SIZE. Much smaller than the Sparrow.

IDENTIFICATION. Recognised by brown under wing-coverts and axillaries, and buffy-yellow lower-parts. No coronal band on the crown which is of same colour as the back. Generally, upper-parts, earthy-brown, tinged with olive on the rump in some birds. Outermost tail-feathers, tipped white. Lower-parts, buffy-yellow to pure yellow on abdomen.

NOTES. Like most Warblers, they prefer large trees to feed in. However, they have a peculiar trait of moving along branches and trunks like a tree-mouse. They even pick up food from the ground.

DISTRIBUTION. Breeding from Afghanistan to Tibet and Kashmir, wintering south of its range to N. India. Winter migrant to Saurashtra and Gujarat.

FOOD. Same as other Warblers.

GREENISH WILLOW WARBLER

Gujerati Name—Lilāshvālō Kīṭkīṭ

Phylloscopus trochiloides viridanus BLYTH

See Coloured Plate 28.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Resembles the Green Willow Warbler but differs in being browner above and less yellow below. There is no wing-bar on the median wing-coverts, the second faint or wanting. Wing measurements: 55 mm. to 65 mm.

NOTES. Typical Warbler habits.

DISTRIBUTION. Breeding in Europe, West Siberia to Tibet, Kashmir and the Himalayas. Migrating south of its range to India and Ceylon. Winter migrant to Saurashtra and Gujerat.

FOOD. Same as other Warblers.

GREEN WILLOW WARBLER

Gujerati Name—Lilō Kīṭkīṭ

Phylloscopus trochiloides nitidus BLYTH

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Upper-parts, dull olive-green, becoming brighter on the rump. Lower-parts, lemon-yellow to dull yellow. A bright yellow supercilium or streak over the eye and a brown line behind the eye. Wings, brown with two yellowish-white wing-bars, one of which is sometimes faint. Tail, brown, edged with olive-green. Sides of lower-breast have a greenish tinge. Eyes, brown. Bill, blackish above. Legs, greyish-brown. At first the bird gives us the impression of a White-Eye without the white eye-ring. It is found in the higher branches of 'Babul' trees in mixed thorny forest and in sparse and thick undergrowth close to water. It is an active little bird moving surreptitiously amidst the branches and leaves. It is a solitary bird and usually seen on the move. Sexes alike.

NOTES. The birds arrive as early as August and September when the rains are favourable. At this time they are in fairly bright plumage. I have always found them in 'Babul' trees with mixed vegetation close to or immersed in water. The bright yellow of the breast is conspicuous as is the supercilium.

DISTRIBUTION. Breeding from Eastern Europe to N.-W. Frontier Province and wintering south of the range to most parts of India down to Ceylon. A regular migrant to Saurashtra and Kutch.

FOOD. Small insects taken on the wing or picked up from under the leaves or from the branches of trees. An active bird while feeding.

TAILORBIRD

Gujerati Name—Tāshkō or Darjīdō

Orthotomus sutorius sutorius PENNANT

See Coloured Plate 28.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. The Tailorbird is small and round with a longish tail. The upper-parts are greenish-yellow with the forehead rusty-red followed by a greyish tinge on the neck. The lower-parts are off-white to whitish. There is a thin black line running over the lower-cheek and appearing as a black streak at the base of the lower-neck, which may be seen from the sides. From October onwards, the birds change into a brown or olive-brown suit with the tail appearing to be shorter. The legs are fleshy. This is a delicate and cheery little bird and often seen hopping from one slender branch to another, calling as it flits from bush to bush. The call may be syllaballed as *chiwhich-chiwhich* to *towheech-towheech* which it utters from the top of a small bush or tree and sometimes from the ground. It is a very common little bird and its movements are amusing to watch. Seldom is there a garden, even though it may be in a town, without this confiding bird. The smallest patch of greenery will entice it, and it is found in forests as well as almost desert country. The flight is undulating and the long tail seems as if it is too heavy to be carried for a straight flight. Its habit of moving amongst low vegetation, climbing up from the bottom to the top branches and then moving from bush to bush is characteristic. It often descends to the ground to pick up insects and hops along an open piece of ground for a few moments or under a thick hedge and then promptly seeks safety amongst thick foliage. Sexes alike.

NOTES. This is a bird of gardens, cultivation, forest and light scrub jungle. It is one of our commonest birds seen everywhere. A pair may be seen in your garden almost throughout the year, and a family of them may remain together just after the Monsoon and during Winter. These birds, as a rule, may be found singly but are usually in pairs not very far from each other. They become fairly tame near habitations and in cultivated areas where they allow close approach.

DISTRIBUTION. Throughout India including Saurashtra. Resident.

NESTING. Season—May to October. Some birds lay earlier. The nest is ingeniously built by binding and sewing together one to three leaves with threads or grass. The wonderful way in which it sews the thread has given it the name of Tailorbird. The number of leaves it utilises depends much upon the width of the leaf; if leaves are slim, four or five are sewn together, but it is rare to find a nest with more than three leaves attached together, the most common being

one leaf turned inwards, invariably towards the main stem of the branch. The stitches can be seen from the outside and appear like white dots or lines. The nest is usually placed low, sometimes a few inches from the ground, the common height being from two to five feet. The bird prefers large leaves and the nest is fairly well-concealed in a green bush or small tree. Shrubs and hedges of broad-leaved plants are popular sites and I have often found nests also in young Teak (*Tectona grandis*), 'Ashopalav' (*Polyathia longifolia*) and young Mango trees (*Mangifera*). Other trees and plants are also utilised. I have also found it nesting in verandahs in cities among plants in flower pots but these are indeed rare sites. Once they become used to habitation, these birds do not hesitate to build close to houses where there is some cover and food not far away. The nest is made up of all kinds of odd materials taken from the rubbish heap and may consist of cotton, wool, pieces of silk threads, cotton threads, hair and such fine material; the inner lining of the nest is made of soft material such as hair or wool or soft seed-coats of certain plants. The entrance is round and the nest-cavity is globular and fairly deep. The nest can be easily located while the birds are building, for they take long pieces of conspicuous material in their bill which often hamper them in flight. Moreover, they are not very secretive and one may easily watch them take their nesting material from one place to another until they finally reach the nest. The eggs number three to five, sometimes even six. They are bluish-green with the larger end splashed with rich reddish-brown or purplish colour. They are beautifully marked eggs.

FOOD. Insects, caterpillars, etc. It seems to be a very useful bird, picking out much insect life from crops and other vegetation. It is very active while feeding, seeking food under leaves and on the slim branches and stems of various plants. It frequently alights on the ground and walks along hedges to pick up food.

KATHIAWAR WREN-WARBLER

Gujerati Name—Kāthiāwādi Fūdkī

Prinia hodgsoni pallidior KOELZ

See Coloured Plate 28.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. A small delicate bird with the upper-parts dark grey with a patch of ash-grey on the breast. By this grey band it can always be recognised. The upper half of the head appears blackish-brown with a tinge

of grey while the lower half and the under-parts to vent are white. The tail is slender and not very long, having dark bars visible on the under-side. Bill, black, paler on the lower-mandible; legs, brown to orange-brown. The wings are brown but edged with a rich rufous which is quite conspicuous. In Winter the birds are slightly browner than grey. In Winter plumage, the bird looks similar to *rufula* from the lower Himalayas, but the upper-side is brownish-rufous and much paler and the under-side has a trace of rusty-cream on the flanks. Sexes alike.

NOTES. A very lively bird, always seen on the move and displaying itself in the air while uttering its quickly repeated characteristic song which, once recognised, immediately indicates its presence. It is found in gardens, scrub jungle, cultivation and forest. It is not a shy bird and may be seen quite close to houses, but it prefers to keep out of city-life and noisy human habitation. It has a pretty little song which it pours forth from the top of a tree or a high branch. This song is monotonous as it is constantly repeated during the breeding season. The bird is very common with us and may be seen almost throughout the year but it moves from one locality to another at various seasons, returning to the same area at the breeding time. The constant short flights it makes, at the same time emitting its song, are unmistakable during the mating season. The bird, once it establishes its territory, very seldom roams about except for food. I have constantly observed it at this time in my garden where it has bred regularly, appearing and disappearing according to the season. A pair has come every year from February to March and, then, having reared its young, departed, returning again after the first rains have broken to remain with us until October. In this species, the tail has 12 feathers in contrast to 10 as with most of the other *Prinia*.

DISTRIBUTION. The whole of Saurashtra, Rajasthan and possibly Kutch. Resident. Common. There are a number of sub-species distributed in various parts of India. This is a newly recognised race of the Franklin's Wren-Warbler*.

NESTING. Season—March to October, sometimes as early as February, while some nests that I found in the Gir were being built in December. The birds appear to have two or more seasons and more than two broods. The first season commences from the middle of February to the end of March; then again when the rains break, from June to October; most of the birds lay between August and October. The birds breeding in Winter are found where food and cover are in plenty, e.g., forested areas. The nest much

* See American Museum Novitates, No. 1452, p. 8.

resembles that of the Tailorbird, being stitched up in a single leaf. The bird, however, does not bend the leaf as much as does the Tailorbird, but uses more grass to sew and form the remaining part of the nest. It is placed low down and amongst broad-leaved wild or garden plants. A favourite plant during the rains is a grey-leaved one which grows wild and has a yellow flower. The eggs number three to four and vary in colour from white to bluish, often blotched with rich reddish-brown, some of them being very beautiful and brightly coloured.

FOOD. Small insects.

RUFIOUS-FRONTED WREN-WARBLER

Gujerati Name—Lālbhālni Fūdki

Prinia buchanani BLYTH

See Coloured Plate 28 and Plate 47.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. A light brownish-grey or khaki bird with a longish tail which may at times be confused with the Tailorbird. The forehead to top of the head is of rusty reddish-brown colour. The under-parts are creamy-white. The tail is faintly cross-barred with the central tail-feathers unmarked while the lateral tail-feathers are tipped white with blackish sub-tips. It is found in scrub jungle, open hilly grasslands studded with thorny bushes, and forest areas. It prefers arid country with undergrowth and stunted thorny trees. 12 tail feathers. Sexes alike.

NOTES. The Rufous-fronted Wren-Warbler is fairly common and widespread during the rainy season. It may often be seen sitting on a thorny bush and pouring forth its monotonous song. It seldom enters gardens, keeping to its natural environment of thorny bush country. Its appearance during the rainy season cannot fail to attract the attention of a keen bird student.

DISTRIBUTION. Most parts of arid India including Gujarat, Kutch and the whole of Saurashtra. Resident, and local migrant.

NESTING. Season—June to October. The nest is placed in a thick thorny bush and is round in shape and appears much like a ball of grass. The favourite site is in a cut-down thorny bush or a newly sprouted one which has been cut down the previous year. The birds prefer to nest in stunted 'Gorad' (*Acacia senegal*), 'Bordi' (*Zizyphus*), 'Jinjavni' (*Acacia mimosa*) and other thorny undergrowths. The nest is never placed very high, generally a few inches to about four feet above the ground, and is well situated in the centre of a

bush where it is not easily accessible. The entrance is near the top and the inside lining consists of soft material like fluff, down, seed-coats, etc. The eggs number four to five and are white with reddish spots or freckles. In shape, they are oval.

FOOD. Insects, caterpillars, etc.

STREAKED WREN-WARBLER

Gujerati Name—Viḍ Fūḍki

Prinia gracilis lepida BLYTH

SIZE. Much smaller than the Sparrow.

IDENTIFICATION. A very small and slim bird with the upper-parts including the wings and tail fulvous-brown, streaked finely with darker brown, reminiscent of the Common Babbler. Lower-parts, pale buff. The tail is finely barred and tipped whitish with a sub-terminal dark band. Bill, black. Eyes, brown. This delicate little bird is found in open arid land, sandy desert and grassland close to water. The flight is jerky and appears uncomfortable. In thorny scrub, the birds fly from bush to bush. The call is a sharp *kit-kit-kit-kit*, apparently made by the snapping of the bill. Ten tail feathers. Sexes alike.

NOTES. These birds are invariably found in long grass in the 'vids' during and just after the Monsoon. They are our smallest Wren-Warblers.

DISTRIBUTION. Drier parts of India including Saurashtra and Kutch, and possibly Gujarat. Resident but prone to local movements.

NESTING. Season—March to September. The nest is made of grass and placed in long grass, or in low thorny bush where there is some grass. It is oval and with an entrance at the side. Usually the eggs number four and are white to greenish-white, finely speckled with reddish-brown. I have found most of the nests during the rains and after the first rainfall. They are difficult to find, being placed fairly low. The birds are not easily flushed off the nest but once they are off, they utter a snapping note.

FOOD. Insects.

ASHY WREN-WARBLER

Gujerati Name—Kāji Pān Fūdki

Prinia socialis SYKES

See Coloured Plate 28.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Upper-parts from head to back including sides of head, dark ash-grey. Rump, brownish-grey. The tail has a dark sub-terminal band, is tipped white and has ten feathers. The wings are rufous. The breast is pale ochre to whitish, the flanks being buff. In some birds there is a pale supercilium while in others it is completely absent. Bill, black, and legs, brown to fleshy-yellow. The eyes are brownish-yellow. The contrast of the dark upper half of the head in line with the eyes to the almost white lower half is characteristic. The slightly curved bill and the shape of the head give it a likeness to the Sunbird. This Warbler is found close to water and readily enters long grass and reeds which stand in or close to water. It also occurs in mixed forests, thorny bushes and cultivation. It generally shuns observation by dropping into long grass or slipping into undergrowth. It also behaves in this manner while feeding, coming suddenly into view and taking a good look before flying to another spot where there is food or cover. Sexes alike.

NOTES. It is not a shy bird but appears less active than most Warblers. It is found in open country, cultivation and forest, restricting itself to watered areas. The call is a distinct *tweet-tweet* by which it may be distinguished. The birds may be seen singly or in pairs. They have a sweet song during the breeding season which they pour forth incessantly from the top of a tree or bush. This song has an abrupt ending.

DISTRIBUTION. Central and Southern India. Not uncommon but patchy in Saurashtra. Found in Gujarat.

NESTING. Season—March to October. The nest varies in shape; it sometimes resembles that of a Tailorbird, at other times it is a ball of grass. The eggs are of rich brick-red colour and can, therefore, be easily distinguished from other Wren-Warblers' eggs.

FOOD. Insects.

JUNGLE WREN-WARBLER

Gujerati Name—Kāṇṇi Fūḍki

Prinia sylvatica JERDON

See Coloured Plate 28.

SIZE. Slightly smaller than the Sparrow.

IDENTIFICATION. This is a light earthy-grey brown bird with a dark head and a grey patch on the face. The rufescent rump is brighter than the back and the upper-parts. The lower-parts are buffy-white. Tail, fairly long, brown and margined with white except for the central two feathers; it is cross-rayed with fine lines; there is also a dark sub-terminal band. Bill, blackish; legs and eyes, brown. In Winter, the plumage changes to warm reddish-brown above and paler yellowish-brown below. During the breeding season, the inside of the mouth is black. The birds are not uncommonly seen singly or in pairs, perched on thorny bushes and Euphorbia clumps and hedges. The sitting posture is generally upright. It is mostly during the breeding season that one hears them calling their monotonous trill. They seem to prefer thorny scrub jungle mixed with stones and boulders where available. They are also found in stunted thorny bush mixed with grassland, thin forest and arid country. A typical habitat I noticed at Porbandar was broken ground studded with thorny trees. Sexes alike.

NOTES. The larger size and longish tail, coupled with its darker colouration, identify this bird in the field. During the breeding season, the male displays by rising straight up and diving headlong with closed wings, repeating the performance in rapid succession. Common call much like Indian brown-backed Robin.

DISTRIBUTION. The whole of India including most parts of Saurashtra. The race of the Abu Jungle Wren-Warbler (*Prinia sylvatica rufescens*) differs in being more grey and less brown than *P. s. sylvatica* in Summer. It is a pale grey bird which inhabits semi-desert and barren rocky hills mixed with grass and bushes.

NESTING. Season—June to October. The nest is like that of the Rufous-fronted Wren-Warbler in every way. The eggs number three to four, and are white to greenish-white in colour and marked with small reddish spots often forming a ring near the broad end. While nest-building, the birds may be seen taking long strips of grass in their bills and this is the only time when nests can easily be traced. The nest is well-hidden in a low thorny bush or grass and camouflaged with cobwebs. Although comparatively large for the bird, the nest is difficult to find. The young are fed chiefly on caterpillars.

FOOD. Insects taken from the leaves, off the barks of trees and also from the ground.

INDIAN WREN-WARBLER

Gujerati Name—Déshti Fūdki

Prinia inornata SYKES

See Coloured Plate 28.

SIZE. Between the Jungle Wren-Warbler and the Streaked Wren-Warbler.

IDENTIFICATION. Upper-parts, pale uniform brown or brownish-grey; wings, brighter brown. Tail, pale brown with faint bars of cross-stripes. A pale supercilium present. Lower-parts, pale buffy to brick-pink in Winter. Bill, black; legs, brown; eyes, yellow with whitish feathers round them. This is a fairly common bird and is seen in low scrub jungles and grasslands. It enters cultivation and gardens. The flight appears laborious and the birds reluctantly fly from bush to bush, often seeking cover by moving amongst low undergrowth. When approached, they drop into thorny bush or grass but reappear in a short time. On the whole, they are not shy birds, allowing close approach and observation. Sexes alike.

NOTES. The birds are found just before and after the rains have broken. Before the rains they frequent scrub forest, and during the Monsoon the millet crops. The call is a sharp *kit kit*.

DISTRIBUTION. Resident in most parts of India including Kutch, Gujerat and Saurashtra. The birds seem to move locally.

NESTING. Season—July to October. The nests are of two types: one a round ball, and the other a pear-shaped purse, being open at the top and made entirely of woven grass; these are almost transparent when seen against the light. The purse-shaped nests are often found in standing 'Jowar' and 'Bajri' crops and on low plants. The eggs number four to six and are very beautiful, being bright greenish-blue and spotted broadly with rich reddish-brown or scrolled with the same colour. The red markings often appear as splashes. During the breeding season, the birds prefer to call from tops of bushes or stunted trees.

FOOD. Insects.

STREAKED FANTAIL WARBLER

Gujerati Name—Ghāsni Fūdki

Cisticola juncidis cursitans FRANKLIN

See Coloured Plate 28.

SIZE. Considerably smaller than the Sparrow.

IDENTIFICATION. This is a very small bird, streaked blackish-khaki and with a longish tail distinguished by the broad white spots at the tip of it, and a rufous patch on the rump. It also has a buffy-white supercilium which is not always distinctly seen. The under-parts are buffy-white, almost rufous on the sides. Bill, brown; eyes, yellowish-brown; legs, fleshy-yellow. The tail is often opened and closed like a fan, and the common call by which it is recognised sounds like a betelnut-cutter in action or like that of the clipping noise of scissors. This bird is found in all types of grasslands including that of scrub jungle.

NOTES. The birds are seen singly or in pairs, and during the breeding season the parent birds may be found with their fledglings quite close together. They keep to long grass; they are quite often seen during and after the rains. I have noticed some birds in hilly grassland close to streams. In this family, the first primary is very small and there are two short rectal bristles; the other small hairs are absent. The forehead is smooth. In Winter plumage, the tail does not have rufous patches.

DISTRIBUTION. Most parts of Western India and Saurashtra. Resident.

NESTING. Season—July to October. The nest is generally built in a tuft of thick grass, almost touching the ground. In shape, it is oval and the entrance is very near the top. The material used is grass, fixed with cobwebs; much of the grass used consists of the main tuft on which the nest is placed. It is a very well-concealed nest. The eggs number five to six and are white or pale blue with reddish spots or freckles, often forming a ring at the larger end.

FOOD. Insects.

BLUETHROAT

Gujerati Name—Neelkanthi

Erithacus suecicus LINNAEUS

See Coloured Plate 29.

SIZE. About that of the Sparrow.

IDENTIFICATION. In appearance and habits, this bird is much like our Indian Robin. The male is a very handsome bird but the bright colours of the breast are not always seen as it keeps to undergrowth and shady places. The cock bird is recognised in full plumage by the round blue and rusty-red patch on the breast. There is a broad white supercilium. The lower-breast to abdomen is whitish, and the upper-parts are greyish-brown to brown. Another characteristic is the chestnut-brown tail which is half black. The female is browner and does not have the bright colours of the male. She is identified by a patch of dark spots on a creamy-white breast. The Bluethroat is generally seen running along the ground or moving slowly in thick undergrowth and amongst garden hedges. It is rather a shy bird, always preferring dark shady places. But one can observe this bird in a patch of garden which it regularly haunts, or in shady places close to lakes or marshes, scrub jungle, cultivation and forested areas. It is a common migrant though not always observed on account of its seclusive and secretive habits.

NOTES. It would help the bird student to go out in the early morning and late evening to observe this bird at close quarters by sitting down and keeping still, for it is really not a wary bird though rather shy, keeping to hedgerows and low cover. I have often watched these birds at close quarters in my garden during early mornings and evenings, when they move about on the ground under a growth of perennial shrubs. They are also seen moving along the centre of a hedge; they can then be approached easily. During mid-day, they keep to well-shaded areas. The bird has a beautiful song, but it is seldom heard during Winter. It is sometimes heard singing when it arrives after the rains, and just before it leaves about April. Every gardener with a good shrubbery should look out for this bird. It runs along the ground pausing to move its tail up and down like a Robin. At times, its movements can be described as sluggish. A close study of it can be easily made if one keeps quiet. On account of its song, it is kept in a cage by bird-fanciers. The birds are seen singly or in pairs but never very close together.

DISTRIBUTION. Breeding in Europe and Asia upto Kashmir, and migrating to India and Saurashtra from August to April. It is a widespread and common Winter visitor.

FOOD. Insects. Most of the food is picked off the ground and from low bushes.

GREY-BACKED WARBLER

Gujerati Name—Rākhoḍi-Peeṭh

Erythropygia galactotes familiaris MENETRIES

SIZE. Somewhat smaller than the Bulbul.

IDENTIFICATION. This is a plain bird with a bright rufous rump and upper tail-coverts; the tail is chestnut and broadly tipped black and white. It has a conspicuous white supercilium. The under-parts are buffy-white. It is often seen spreading out its tail while flying from tree to tree. It affects thorny scrub jungle in dry open country. It is very Robin-like in its habits.

NOTES. This bird has been noted by Mr. Sálím Ali at Dwarkā. The Yuveraj of Jasdan tells me he has seen some at Jasdan.

DISTRIBUTION. Northern India to Saurashtra as an Autumn migrant. Mr. Sálím Ali mentions it in the "The Birds of Kutch", page 25.

FOOD. Insect life.

KASHMIR REDSTART

Gujerati Name—Kāshmiri Thartharō

Phoenicurus ochruros phoenicuroides HORSFIELD AND MOORE

See Coloured Plate 29.

SIZE. About that of the Sparrow.

IDENTIFICATION. Recognised by the head,* back and upper-breast being black to inky-black. Lower-breast, under-parts and tail, chestnut. In the female, the black is replaced by the brown. In both sexes, the central tail-feathers are blackish which can be observed only at close quarters. This bird is a common migrant, arriving just after or even during the late Monsoon. Its conspicuous habit of quivering its tail, as if it was balanced on a thin wire, and bobbing its head up and down, immediately reveals its identity. The body-pose, when perched, is almost vertical. It is seen singly in gardens, forests and cultivation, confining itself to shaded areas.

NOTES. These birds readily enter gardens, taking refuge in well-foliaged bushes and hedges during the mid-day sun. They are often seen on walls and

*The crown is often suffused with grey.

fly to the ground to pick up some insect, returning immediately to cover. They are very active on the wing and resent being observed at close quarters, invariably flying into thicker cover or out of view. Some birds, however, become accustomed to human habitation much more than others, and I have watched them entering verandas, seeking insect life. The females seem to be much tamer than the males. The male has a sweet song which is rarely heard during Winter.

DISTRIBUTION. Breeding in Kashmir and migrating southwards to N.W. India and Saurashtra, where it is seen from September to late April.

FOOD. It seems to be a most useful little bird, catching flies, mosquitoes and small insects. It feeds while on wing and also picks up food from the ground, returning immediately to its perch or some shady area. It often enters verandas in search of insects but, being of timid nature, immediately flies away to safety. Birds have been caught entering rooms.

INDIAN MAGPIE-ROBIN

Gujerati Name—Dajyad

Copsychus saularis saularis LINNAEUS

See Coloured Plate 26.

SIZE. About that of the Bulbul.

IDENTIFICATION. The male is a very handsome black and white bird. He has the head, neck, upper-breast, and back, glossy black. Tail, white with black central feathers. Under-parts, white. Wings, glossy black with a white stripe on the wing-coverts conspicuously seen in flight. Bill and legs, black. The tail is moderately long. The female differs in having grey in place of black. The bird is found in well-watered areas and shady places, in gardens, forests and 'wadis'. It prefers areas with evergreen trees, extensive plantations and forest.

NOTES. This Robin is a magnificent songster which can be best heard at the beginning of the breeding season, commencing about April or May. It is an excellent mimic of other bird songs and calls. The common note uttered at all seasons is a soft prolonged whistle, transmitted in a fairly high key, *viz.*, *cheeeeu*. The male is a pugnacious bird during the breeding season, singing vigorously in its established territory. One may hear a male singing while perched on top of a tree or elevated ground, challenging another rival male which may not be very far away. It is indeed a pleasure to listen to the cock

birds trying to out-sing each other. I have often imitated their whistle and have had them flying low over my head to investigate a rival male. These birds are prized by all bird-fanciers who keep them in small cages for their sweet song. Magpie-Robins are seen singly or in pairs but never close to each other, except during the breeding season. In Winter the birds migrate from one area to another, but during the hot months a pair of Magpie-Robins will only establish itself in a forest, garden or plantation where there is water close by and where there is plenty of shade and food. I should call it a poor garden which does not possess a pair of Magpie-Robins during the hot season. The birds keep to well-foliaged trees at mid-day but during the early morning and evening they can be seen on the ground looking for insects which they often pick up; they then fly to a nearby tree, much in the manner of our Brown-backed Robin.

DISTRIBUTION. The whole of India and most parts of Saurashtra. Not seen in Kutch. Resident in some areas of Saurashtra but otherwise a local migrant. It is fairly well-distributed over the country during the Winter months.

NESTING. Season—May to August. The birds usually nest in hollows of trees and stumps and in holes in banks, but very rarely on the ground. The nest is made of grass and sometimes lined with hair or silky seed-coats or wool. The eggs number three to five and are a beautiful greenish-blue, splashed with dark reddish-brown. The birds breed in well-shaded and watered areas. The Gir and the base of the Girnar Hill are ideal breeding grounds. However, they are known to have bred in many other parts of Saurashtra where conditions are favourable. Both parents help to rear the young but the female invariably incubates the eggs.

FOOD. Insect life. Food is taken from the ground as well as from the air. When the young are hatched, both parents move in a busy and nervous manner. When searching for food, they often spread-out their tails.

INDIAN BROWN-BACKED ROBIN

Gujerati Name—Kāji Déva

Saxicoloides fulicata cambaiensis LATHAM

See Coloured Plate 26.

SIZE. Slightly larger than the Sparrow.

IDENTIFICATION. The male has a blackish body with an inky-blue sheen on its breast; it also has a conspicuous white patch on the wing and a deep

chestnut patch under the tail. The back is brownish-grey in Winter. Bill and legs, black. The female is browner with a lighter chestnut patch under the tail, and is easily distinguished from the male by the absence of the white wing-patch. The Indian Robin is a confiding little bird with its chest always puffed out and its tail held erect over the back. It has a short pretty song during the breeding season but is not a very good mimic of other bird songs. The common note uttered is a sweet prolonged whistle, a *whheet*, which is emitted softly but can be heard distinctly at a fair distance. It also has another rather harsh note indicating alarm, and a short note which sounds like the click commonly made by rural people which indicates "no". This is produced by the tip of the tongue being released from the palate. The Indian Robin is a common bird seen in gardens, forests and cultivation. It is, at times, so confiding that it will approach door-steps and enter verandas in search of food and nesting sites or to take refuge from the mid-day heat. The flight is low and rather slow. It is a bird very often seen perched on top of a small stone or rock, or on stumps of trees or slender branches of bushes from where it watches out for insects.

NOTES. The bird is considered as a good omen amongst certain Rajput clans and is therefore a sacred bird. It is very useful, feeding upon harmful insects. At certain times of the year, just after the breeding season is over, the birds seem to disappear for a short period and then return to their breeding grounds as soon as conditions are favourable. During the period when they are less seen, they sometimes give an impression of being rare, whereas during the breeding season males are seen and heard singing pugnaciously and it is then often possible to attract them to close quarters by imitating their calls. During courtship, the male spreads his tail fanwise and, while raising and depressing it, pours out a rather melodious song which it keeps on repeating. The male attracts the female by offering her food and often feeds her even after the eggs are laid.

DISTRIBUTION. Resident throughout Saurashtra, Kutch, Gujerat and Northern India. A number of sub-species are recognised in various parts of India.

NESTING. Season—Varies a great deal, some birds laying as early as January and February. I once found eggs in December. The general breeding season, however, commences in March and goes on till June-July, most eggs being laid between April and June. The nest is made of fine grass and sometimes lined with hair. It is a neat cup and is placed in a variety of places, *e.g.*, in hollows of trees, rotten stumps, holes in banks, under stones, in cavities amongst boulders. However, the favourite site where I have found most nests is ploughed fields under the protection of clods of earth. The birds also nest under roofs, in verandas and under roof-tiles of mud-houses. I have seen a nest in an empty pot, turned over. In fact, any sort of cavity may be made use of. The eggs number three to four, and have a greenish-ground colour splashed all over with rich reddish spots. Some eggs have pinkish-white to creamy-white

ground colour. The incubation lasts 12 to 13 days in which the female alone takes part but is often visited by the male. The nestlings are usually black. A great enemy of this bird during the breeding season is the Tree Pie.

FOOD. Insect life; mostly grubs, caterpillars and ground insects. The food is usually picked up from the ground. The bird, while perched on a stone or bush, watches out for moving insects and, having seen its prey, flies to the ground to pick it up. While doing so, the tail is often depressed. During the breeding season, both sexes take part in searching for food to feed the young, and the birds are then seen actively scouring the ground; they then display a peculiar behaviour from which an experienced bird-watcher can tell that the birds have the young. They run and stop in their search for food, often trying to flush insects with the aid of wings and tail or turn over small stones and leaves with their bill.

BLACK-CAPPED BLACKBIRD

Gujerati Name—Kastūri

Turdus merula nigropileus LAFRESNAYE

See Coloured Plate 20.

SIZE. About that of the Myna.

IDENTIFICATION. The male is a blackish-brown bird with a black cap. The under-parts are smoky-grey. The female is browner. Bill, orange-yellow to pale-yellow. Legs, yellowish. Eyes, brown. The bird is very secretive in habits, keeping to thick undergrowth and perching on tall trees. On the ground, it keeps to a crouching position and, when approached, prefers to scutter into low under-bush. However, when flushed, it has a rapid flight much like that of a Koel. Unfortunately, this bird is not heard during Winter, for it has a beautiful song. It is a Winter migrant with us and most uncommon. The birds are found solitary in well-shaded and watered areas amongst plantations, extensive gardens and forest. They have a short note heard during Winter and when about to fly. This note is a *churr* which, once heard, reveals its identity. They also emit a high pitched whistle, *viz.*, *chuck*.

NOTES. The bird has been seldom recorded in Saurashtra but I have authentic records of it as a regular visitor to Jasdan from the Yuveraj of Jasdan. On account of its seclusive habits, it is very seldom noticed by bird-watchers. I have seen it in the Gir Forest in March and April, and it appears to be a more regular migrant to this area than any other.

DISTRIBUTION. A rare Winter migrant into Saurashtra and breeding in the hilly portions of Western India.

FOOD. Insects, worms, snails, berries and other fruits. The birds are early feeders and are seen at dawn and in the evening.

BLUE ROCK THRUSH

Gujerati Name—Pāṇḍū Shyāmā

Monticola solitaria pandoo SYKES

See Coloured Plate 26.

SIZE. Between the Bulbul and the Myna.

IDENTIFICATION. Male: A dark bluish-grey bird with the tail slightly darker. Lower-parts, barred in some male birds. Legs and bill, black. Female: Dark brownish-grey with the under-parts having transverse dark bars to the feathers. This Rock Thrush is found in rocky country and is mostly seen amongst stone-quarries, boulders, and cliffs, and on stone walls. As a rule, it is seen in open country and on the sea coast. In habits, it is a little shy, appearing as if about to fly out of view at the slightest provocation. It has a characteristic habit of crouching and bobbing its body up and down in jerky movements. It readily enters gardens and may be seen perched on the wall, neighbouring trees or roofs. It is also seen on the ground from which it takes most of its food. It is usually a silent bird but has a very sweet song which can be heard when the birds have newly arrived just after the rains, or when just about to leave in March or April.

NOTES. These birds are regular Winter migrants and are seen almost in the same places year after year. They are seen singly or in pairs, but never close together. Once they have established their territory, they seem to adhere to it for quite a long time, pugnaciously driving away new comers.

DISTRIBUTION. Breeding in the Himalayas and migrating to India and the whole of Saurashtra, Kutch and Gujerat after the Monsoon. They are found all along the Saurashtra coastline, some birds arriving as early as August while others coming during September-October. Most birds leave the country in March. This Thrush is a common Winter migrant.

FOOD. Mostly insects, snails, centipedes, mole-cricket, worms, grasshoppers and beetles. It is a restless bird while feeding, though never wandering very far from its established territory. I have seen the birds keeping to one area for

months together until the time for migration urges them to leave. Most of the food is taken off the ground.

ISABELLINE CHAT

Gujerati Name—Piḷō Piddō

Oenanthe isabellina TEMMINCK

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. This is a sandy-brown bird with a conspicuous patch of white on the upper tail-coverts and rump. The tail-feathers are white and black tipped with white edges. It has a narrow white supercilium with the lores black and a black line across the eye which is less visible during the Winter season. Eyes, brown. Bill and legs, black. It is slightly larger than the Desert Chat. The entire body is biscuit-coloured. The lower-plumage is pale and buffy-white and the throat almost white. The female resembles the male but can be distinguished at close quarters by the less distinct supercilium and eye-streak. This Chat may be seen quite solitary in open country and prefers stony ground and semi-desert conditions studded with small bushes and rocks. It has a habit of dipping up and down.

NOTES. It is a Winter visitor and is not uncommon, but less common than some of our other Chats.

DISTRIBUTION. Breeding in the Near East and Asia upto Kashmir, and wintering south into Western India. A Winter migrant to Saurashtra.

FOOD. Insect life.

DESERT CHAT OR DESERT WHEATEAR

Gujerati Name—Raṇa Piddō

Oenanthe deserti TEMMINCK

See Coloured Plate 29.

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. The male is easily recognised by the black patch on the throat as well as the black sides of the head and lower-neck. He has also

a grey patch on the crown and a distinct white supercilium. Upper-parts, sandy-brown, with the wings black but edged white. There is also a white patch on the wings which is clearly seen when flying. Lower-parts, buffy-white. The rump is creamy-white or buff, the upper-part of the tail white and about two-thirds of the end of the tail black. The female differs in having no black on the face or throat, and is a much greyer and browner bird. Upper part of tail and rump, buff. The Desert Chat, as its name suggests, is found in open and desert country. It also enters cultivation and open fields. It is generally seen perched on slender stems of old crops or stubble, and is often solitary.

NOTES. The birds arrive soon after the rains from September, and return to their breeding ground in March-April.

DISTRIBUTION. Breeding in Central Asia and migrating south into India including Kutch, Gujerat, and Saurashtra. It is a fairly common Winter migrant with us. Two races, *viz.*, *atrogularis* and *oreophila*, may occur in Saurashtra.

FOOD. Insect life.



RED-TAILED CHAT

Gujerati Name—Lāl Pūnchh Piddō

Oenanthe xanthopyrna HEMPRICH AND EHRENBERG

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. This is a sandy grey-brown Chat with a chestnut tail tipped black. Supercilium, dull greyish-white; throat, white. Lower-parts, ash to pure white. Eyes, bill, and legs, black. This bird keeps to open stony country and desert areas studded with small bushes.

DISTRIBUTION. It is a Winter visitor to Northern India and Kutch; Mr. Sálím Ali records it in Gujerat and Northern Saurashtra.

NOTES. I have not been able to collect it but have seen it in the desert areas of Saurashtra, *e.g.*, Dhrangadhra.

PIED CHAT

Gujerati Name—Kābarō Piddō

Oenanthe picata BLYTH

See Coloured Plate 29.

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. This is a black and white bird. Head, neck, upper-breast and upper-parts, jet black. Remainder of under-parts, pure white. Tail-feathers, white, tipped with black. Bill and legs, black. The female has the black replaced by the brown and her lower-parts are pale buffy-white. Young birds resemble the female but have brown edges to the breast and flanks. The body is usually held horizontally but the head and neck are often lifted high. It has a habit of bobbing its body up and down and quivering its tail like a Wagtail. It is found in open country, preferring rocky ground and open spaces. It has a beautiful song and is an excellent mimic.

NOTES. Pied Chats are conspicuous birds in the field. They arrive after the Monsoon and during Winter. This is not an uncommon species, being found practically throughout the countryside. It appears to be slightly shy, but with patience, one may watch it at close quarters without disturbing it. The birds are seen singly and sometimes in pairs but never close together. The flight is generally low above the ground.

DISTRIBUTION. A post-Monsoon and Winter visitor in the drier parts of North-Western India and throughout Saurashtra.

FOOD. Small insect life. It is a very active bird, catching its prey swiftly off the ground and in the air.

STOLICZKA'S BUSH-CHAT

Gujerati Name—Stoliczka-nō Piddō

Saxicola macrorhyncha STOLICZKA

SIZE. Same as the Bush-Chat.

IDENTIFICATION. Differs from the Indian Bush-Chat in having a broad supercilium or pale line over the eyes, the rump and breast being buffy-white.

NOTES. Rarely met with except in the drier portions of Saurashtra.

DISTRIBUTION. Drier areas of Saurashtra and India. A Winter migrant.

FOOD. Insect life.

PIED BUSH-CHAT

Gujerati Name—Shyāmā Piddō

Saxicola caprata bicolor SYKES

See Coloured Plate 29.

SIZE. About that of the Sparrow.

IDENTIFICATION. The male bird is black and white, having white patches above the tail and on the wings; the abdomen and vent are white. When seen perched, the white on the wings forms a stripe. The female is brown and the patch above the tail is reddish-brown. In both sexes, the shape of the body is roundish with the bill and legs black. The bird is found in open country, and is fairly common during Winter in scrub jungle, cultivation and grassland studded with bushes. It also enters gardens. It has a habit of moving its tail up and down and emitting rather a plaintive whistle: *pee-pee*. Another call is a *tick-tick*.

NOTES. I have often seen it on hedges next to open fields and in almost desert type of country where there are low bushes.

DISTRIBUTION. Most parts of India including Kutch and Gujerat and fairly well-distributed over the whole of Saurashtra. It arrives in September and is seen upto March. I do not believe it breeds in Saurashtra though it is resident in other parts of India. We see it mostly during the cold weather.

FOOD. Small insect life. It feeds much like our Indian Robin, taking the food off the ground and while on wing. Its habit of flicking its tail up and down is diagnostic.

INDIAN OR COLLARED BUSH-CHAT

Gujerati Name—Mēndiō Piddo

Saxicola torquata indica BLYTH

See Coloured Plate 29.

SIZE. About that of the Sparrow.

IDENTIFICATION. The male is recognised by his well-cut black head, a broad reddish-brown collar, and a patch of white at the base of the neck near the shoulder. He has a rusty-red breast, the lower-parts being whitish. Legs and bill, black. The tail is black with a band of white across the base which is not often seen. The female is uniform brown with dark streaks on the head, and the white patch on the wing is much smaller and less conspicuous. This bird is commonly found in open country and on rocky hills. It has a habit of sitting on top of small thorny bushes and slender stems, also of flicking its tail up and down when perched.

NOTES. This bird is widespread during the Winter months and is one of our commonest Chats. It prefers to keep to cultivation and open arid country rather than to forest and gardens.

DISTRIBUTION. Most parts of India including Kutch and Gujerat and the whole of Saurashtra. Non-resident in Saurashtra. Breeding in the Himalayas.

FOOD. Insect life. It flies up into the air to catch insects and returns to the same perch. It also feeds on the ground like a Robin.

TREE PIPIT

Gujerati Name—Dhān Chidi

Anthus trivialis LINNAEUS

SIZE. Slightly larger than the Sparrow.

IDENTIFICATION. This is a slender khaki-coloured bird with a longish tail. The upper-parts are dusky-brown, streaked with black. Lower-parts, creamy-white, the breast having conspicuous black streaks. Head, browner than the back and also streaked. Tail, khaki-brown, with white outer tail-feathers. Bill and eyes, brown; legs, fleshy-brown. The pale but distinct supercilium helps to identify the bird. Sexes alike.

NOTES. Tree Pipits are not common and are found in gardens, cultivation, 'wadis' and forests. They are seen in small groups or singly and will allow

fairly close approach. They come down to feed on the ground but fly away to the nearest tree on approach. While rising, the white outer tail-feathers are clearly seen. They are silent birds.

DISTRIBUTION. Breeding in Northern Asia and the Himalayas, and migrating south to India including Kutch and Gujerat in Winter. Regular migrant to Saurashtra. Mr. Sálím Ali has collected specimens at Dalkhanía in the Amreli district which belong to the typical race.

FOOD. Not properly known. The birds seem to do most of their feeding on the ground.

INDIAN TREE PIPIT

Gujerati Name—Lilāshvāli Dhān Chidi

Anthus hodgsoni RICHMOND

See Coloured Plate 24.

SIZE. Same as the last.

IDENTIFICATION. Differs from the last species in being more greenish on the upper-parts and in having the streaks much narrower. The white outer tail-feathers are more conspicuous. In habits, the bird resembles the previous species. It seems to be a regular migrant with us but appears to be less common than the last species.

NOTES. The sudden arrival and departure of the birds during Winter and Spring is a well known feature of this species. They do not remain long in the same area, although they are regularly seen for a few days. They may be found in gardens, fruit orchards, cultivation and forests. A characteristic of Tree Pipit is that when disturbed from the ground, it flies up to settle on the nearest tree.

DISTRIBUTION. Breeding in the Himalayas and migrating to most parts of India. Uncommon in Saurashtra.

FOOD. Seeds, etc.

BROWN ROCK PIPIT

Gujerati Name—Patharā] Dhān Chidi

Anthus similis JERDON

SIZE. About that of the Bulbul.

IDENTIFICATION. This is an almost uniform rufous-brown bird much like a Wagtail in shape. The head is carried erect when the bird walks on the ground. The hind-toe is almost the same in size as the hind-claw. The bird has a short supercilium. It is usually seen walking about singly in arid country and in open fields or grassland. Sexes alike.

NOTES. Mr. Sálím Ali collected this species at Dwarkā. I have seen many of them in Bhavnagar. The few single birds I saw at Chānch (Gohilwad) appeared more grey to khaki-grey, and some that I collected there lacked the central dark streaks on the back. The wing measured 92 mm. and the culmen 14 mm.; and, therefore, they possibly belonged to the Persian race, *decaplus*. Brown Rock Pipits allow close approach. I have often watched them approaching me in order to take shelter in a shady verandah. The flight is rapid and close to the ground. The bird emits a Wagtail-like chirrup as it flies, and is fairly strong on the wing.

DISTRIBUTION. Most parts of India including Kutch, Gujerat and Saurashtra. This species is found breeding in the Himalayas.

FOOD. Mostly insects.

INDIAN PIPIT

Gujerati Name—Dēshi Dhān Chidi

Anthus novaeseelandiae GMELIN

See Coloured Plate 24.

SIZE. About that of the Sparrow.

IDENTIFICATION. A khaki-brown bird with dark streaks on the upper-parts, distinguished from allied species by having only scanty markings on the breast, these being sometimes absent, and also by a long, slightly curved hind-claw. The outer tail-feathers are white and can be seen clearly as the bird rises or settles. It has a distinct supercilium, a pale brown line under the ear-coverts and another along the throat. Legs, fleshy-yellow; bill, horny and paler at the base. In younger birds, the markings on the breast and upper-parts, including

the wings, are more pronounced and numerous. The bird is seen in open country, close to cultivation, fields and lakes, normally on the ground, walking like a Wagtail. Sexes alike.

NOTES. This is a fairly common bird but because of its plain dusty colouration, it goes unnoticed.

DISTRIBUTION. E. C. Stuart-Baker says in 'The Fauna of British India', Vol. III, Page 291: "The Indian Pipit is resident wherever found.". I have still not come across it breeding with us although it may do so.

The whole of India, Ceylon and Burma. Most parts of Saurashtra. Possibly resident. Seen commonly during Winter.

NESTING. According to E. C. Stuart-Baker in 'Nidification of the Birds of the British Empire', Vol. III, page 147-148, "The breeding season everywhere seems to be April, May and June, but a good many birds breed in the end of March, and a few others upto the end of July". The Indian Pipit always breeds in grass but otherwise the situation varies greatly. "Nine nests out of ten will be found placed in among the roots of grass-tufts, large enough and tall enough to give them complete concealment." "Some nests are approached by a tunnel in the grass, a characteristic of this bird referred to by Colonel Butler and one I have often seen myself. Sometimes in beaten-down grass the tunnel may be over a foot in length,". The eggs number three to four, and rarely five. They vary greatly. The most common type has a pale grey or buff ground, or, much more rarely, a pale greenish ground, speckled with blackish-brown and grey, some forming a cap at the larger end.

FOOD. Insects; sometimes caught in the air, but mostly picked up from the ground.

TAWNY PIPIT

Gujerati Name—Pīlāshvāli Dhān Chidi

Anthus campestris LINNAEUS

SIZE. Slightly larger than the Sparrow.

IDENTIFICATION. A bird of the colour of a female Sparrow, with sandy-buff edges to the wing-coverts and the breast poorly marked or uniform pale khaki-white. Two black streaks under the eyes, a creamy-white supercilium, and a black eye-streak. Legs, yellow; bill, horny. Another sub-species with pale yellowish tinge on plumage is also to be seen, viz. *griseus*. According to Mr. Sálím

Ali ('The Birds of Kutch', Page 56), "in fresh adult plumage, distinguishable from the Indian Pipit by being more sandy-coloured above, by the absence of all spotting on the breast and by a very pale wash of primrose yellow in the plumage, especially the underparts. In immature and worn plumages field identification with certainty is almost impossible". Sexes alike. The Blyth's Pipit (*A. c. thermophilus*) has been collected by Mr. Sálím Ali at Mithapur, Amreli.

NOTES. I have seen these birds regularly on the coastal belt and sand dunes, and in flat country of Saurashtra. Resembles the last species in habits.

DISTRIBUTION. Most parts of India, and breeding in Eastern and Central Asia. A common migrant to Saurashtra, Kutch and Gujerat.

FOOD. Insects.

HODGSON'S PIPIT

Gujerati Name—Hodgson-nô Dhân Chidi

Anthus roseata BLYTH

SIZE. About that of the Sparrow.

IDENTIFICATION. Head, brick-red or pinkish, with a broad buffy supercilium; neck and breast, warm buffy-pink; lower-breast and flanks, fulvous and streaked boldly with black. Under-wing, whitish or yellowish; upper-parts, blackish, mixed with olive-brown; tail, dark brown, with outermost pair of feathers edged white; iris, dark brown above and pale yellow below. Legs, brown. In Winter plumage, the birds lose the pink head and breast and are a rusty-brown colour. Immature birds do not have the buffy-pink colour but are more olive-brown above, reminiscent of the Indian Tree Pipit, and have the flanks and breast of pale greenish-yellow tinge but boldly streaked with black. Sexes alike.

NOTES. The birds prefer the waterside or swampy ground. The flight is undulating. When flushed, they rise with a chirruping call. I have found them wary.

DISTRIBUTION. Breeding from Afghanistan to the Himalayas. Wintering south of its range to N. India and Burma. Only one record in Saurashtra: from Bhavnagar (See J.B.N.H.S., Vol. 50, No. I, Page 175, August 1951). This seems to be its southernmost limit.

FOOD. Insects.

BLUE-HEADED YELLOW WAGTAIL

Gujerati Name—Bhūrā Māthānō Pīlakiyō

Motacilla flava beema SYKES

SIZE. Same as that of the White Wagtail.

IDENTIFICATION. Recognised by its pale bluish-grey forehead and crown extending to the nape, and a white supercilium. Ear-coverts and cheeks, whitish, but not always so; sometimes, forming a faint line. Some birds have the crown mixed with greenish-grey. Upper-parts, brownish-olive edged with yellow; rump, olive-green. Lower-parts, yellow; tail, black, narrowly edged yellowish, with outer pairs of feathers white, brown on the webs of the wing. Bill, blackish; feet, dark brown. The female is less bright. Young birds are brownish-grey and paler on the lower-parts.

NOTES. In Winter, when most of our birds are seen, Blue-headed Wagtails seem to vary in their grey crown and supercilium and should not, therefore, be confused with the next sub-species which has darker cheeks and practically no supercilium. Some specimens appear intermediate.

DISTRIBUTION. Breeding in West Siberia and south to Kashmir, and migrating into most parts of India in Winter. Fairly common in Saurashtra, arriving at the end of the Monsoon and departing in March-April.

FOOD. Small insects picked up from the water's edge or fields.

GREY-HEADED YELLOW WAGTAIL

Gujerati Name—Rākhoḍi Māthānō Pīlakiyō

Motacilla flava thunbergi BILLBERG

See Coloured Plate 30.

SIZE. Same as the White Wagtail.

IDENTIFICATION. Head and nape, grey to ash-grey to olive-grey, but bluish-grey in full plumage. No supercilium. Upper-parts, olive-green; bright yellow from throat to abdomen. Chin, rarely white; throat, always yellow. Eyes, brown. Upper-mandible, black; lower-mandible, brownish-yellow. Legs, dark brown. This description applies to the Summer plumage in which the bird is rarely seen except from March onwards. In Winter, it looks totally different. Head and ear-coverts to neck, a dark ash-grey mixed with olive-brown; upper-parts, dark olive to ash-black, the scapulars having reddish-brown

edges. Lower-parts, from chin, yellow, and in some birds a black chain of feathers, running across the breast or mottling with dark markings, is seen. This sub-species resembles the Blue-headed Wagtail very closely but is distinguished by the ear-coverts being much darker and having no supercilium. Young birds are greyish-brown above and dull white below. The Grey-headed Wagtail is fairly common during Winter, being found in large numbers in open fields, often roosting in standing crops, 'wadis', and marshy ground. Many birds are seen in bright breeding plumage on the side of a lake in March-April on their return migration. Sexes alike.

NOTES. They readily mix with other Wagtails from which they are not easily separated in the field. They are active birds and always on the move. Fields with green crops, e.g., lucerne, are their favourite resorts for feeding. They are shy at the time of their return migration.

DISTRIBUTION. Breeding in Scandinavia, Russia, Western Siberia, and Tibet to Kashmir. Migrating southwards in Winter, and found throughout India. Fairly common in Saurashtra during the cold months upto March-April.

FOOD. Insects, mostly flushed from the ground or water's edge. The birds on migration may be seen feeding on mud-flats with other Wagtails, and amongst cattle.

BLACK-HEADED WAGTAIL

Gujerati Name—Kālā Māthānō Pīlākīyō

Motacilla feldegg flava MICHAELLES

See Coloured Plate 30.

SIZE. Same as that of the White Wagtail.

IDENTIFICATION. This Wagtail is distinguished from other Wagtails by the whole upper-head and neck being coal black and the lower-face yellow. There is no supercilium and the upper-parts are dark olive-green. The lower-parts are a deep golden-yellow. The legs and the bill are blackish-brown. Some birds have the upper-head faintly washed with black. This Wagtail prefers lakesides, and marshy grounds close to reedy patches on lakes, rivers, and long stretches of water, e.g., canals, etc. Sexes alike.

NOTES. The birds are seen arriving soon after the Monsoon and remain as late as March-April. They are usually met with singly and are nowhere common. However, on the return migration in February to April, they may be seen to congregate with other species of Wagtails. They are encountered during Duck and Snipe shoots at any time during the Winter season. I have not

found them very shy, allowing fairly close approach. The race *melanogriseus* which has white chin and throat also occurs with us.

DISTRIBUTION. Breeding in South Europe to Turkestan and Russia, and migrating east into India and Saurashtra. A regular migrant with us and not uncommon.

FOOD. Insects close to water. While seeking food, it may be seen on green ground well away from water's edge. The green grass on the edge of a receding lake is favourite feeding ground for all Wagtails.

YELLOW-HEADED WAGTAIL

Gujerati Name—Piṭā Māthānō Piṭakiyō

Motacilla citreola citreola PALLAS

See Coloured Plate 30.

SIZE. Same as that of the White Wagtail.

IDENTIFICATION. In Winter, the crown is mottled with dark grey; forehead and upper-head, yellow; supercilium, always present and yellow, but inconspicuous when the whole head is yellow; upper-parts, dark ash-grey; edges of feathers, white. Lower-parts, yellow; eyes, dark brown; sometimes an eye-stripe present; legs, black. Tail, as in most Wagtails, blackish with whitish outer tail-feathers. At the end of February and March, when this bird is fairly frequently seen, it has the forehead and almost the whole head conspicuously bright yellow; also, the lower-parts are same bright yellow. The median-coverts have more white on them. This bird is distinguished from *M.c. calcarata* or Hodgson's Yellow-headed Wagtail by having the back olive-grey to ash-grey instead of black. The female is a sombre bird, her lower-parts being pale white with traces of pale yellow while the upper-parts including the crown are a more uniform ash-grey. The Yellow-headed Wagtail is distinguished from the Black-headed and Grey-headed Wagtails by the distinct yellow supercilium. At all times this species emits a distinct call-note, *tseek-tseek*, as it flies. It is slightly larger than the Grey-headed and White Wagtails. The flight is undulating. Young birds are greyish-brown, but paler below; the supercilium is visible.

NOTES. This species frequents streams and lakes in which it may be seen wading to pick up food. It is attracted by lucerne fields and small groups may be seen in them. It assumes its full plumage in March, although some birds may be in pale yellow or straw-coloured head dress during the Winter months. The males then appear conspicuous in their beautiful yellow dress. They

can then be readily distinguished from other Wagtails with which they are often seen feeding.

DISTRIBUTION. Breeding from East Russia to Mongolia and southwards to Turkestan. Migrating southwards of its range to most parts of India including Kutch, Gujerat and Saurashtra after the Monsoon and during Winter months. A regular Winter visitor, fairly widespread in Saurashtra.

FOOD. Insects. The birds may be found on streams, shores, lakes and shallow water courses in search of food. They also visit cultivation and lucerne fields and such other green vegetation. On the whole, they prefer marshy land, often wading in water. Where food is abundant, they feed voraciously, picking up minute insects from water's edge.

EASTERN GREY WAGTAIL

Gujerati Name—Vana Pilakiyô

Motacilla cinerea TUNSTALL

See Coloured Plate 30.

SIZE. That of the White Wagtail but with a relatively longer tail.

IDENTIFICATION. Upper-parts, ash-grey to olive-brown; head, darker; nape, grey; characterized by the white supercilium and white moustachial streak below the eyes. Cheeks, grey. Chin and throat in male, whitish in Winter; black in Summer. Upper-back, bluish-grey; upper tail-coverts and rump, greenish-yellow; tail, black and edged yellow, with the outer three pairs of feathers white and the inner two having black edges. In comparison with other Wagtails, the tail appears longer. Lower-parts, yellow to bright yellow, especially near the vent; paler on breast. Bill and eyes, black. Legs, horny-brown. Scapulars, edged yellowish. Wings, dark brown, with a pale band. The female is much paler on the lower-parts. This bird is seen close to water, in the fields and on the seaside, at times in large numbers in the coastal areas, whereas along shallow streams in mixed deciduous and thorny forest and along the rivers it is found singly or in pairs. The birds seen on streams in the Gir Forest in Winter belong mostly to this species. In habits, this Wagtail is an active bird and inclined to be a bit shyer than our common White Wagtail.

NOTES. Large flocks are frequently seen flying northwards on the east coast of Saurashtra in October. Their movements are not very regular.

DISTRIBUTION. Breeding in Russia and Eastern Asia to the Himalayas, and migrating to India including Gujerat, Kutch and most parts of Saurashtra. Regular migrant and not uncommon during Winter.

FOOD. Mostly insects. The birds may be seen running along the waterside and picking tiny insect life from the water's edge. They are often seen wading in search of food. Rarely does one come across a flock in open cultivation. In such instances, they are on the feed, moving quickly over the ground. The birds are, then, on the alert.

PIED WAGTAIL

Gujerati Name—Khanjan

Motacilla maderaspatensis GMELIN

See Coloured Plate 30.

SIZE. About that of the Bulbul.

IDENTIFICATION. Distinguished from the White Wagtail by its larger size and conspicuous pied plumage. Whole upper-parts, black with a white supercilium extending to nape. Chin and breast, black; rest of lower-plumage, white. The wings are black and white, and there is some grey on the rump. This bird is found mostly near water. Rivers, lakes and streams are likely places to find it. When seen on rivers and lakes, it prefers rocks and banks where it is found singly or in pairs. It is not uncommon to see it during Winter in forested areas and plains, in open spaces and in short green grass not far from water. I have, however, never seen it in large flocks like some of the other species of Wagtails. This bird has a beautiful song and is an excellent mimic. The flight is typical of the Wagtails.

NOTES. If one wishes to study the habits of this bird and to see it in its real home, one should visit the rivers and the large outcroppings of rocks which are in mid-stream and near the shore or bank. If one is there at the end of February or upto April or possibly May, the males may be seen perched on tops of rocks and heard pouring out their beautiful song. The female is similar to the male and it is hard to sex her. She is not as pugnacious as the male, however.

DISTRIBUTION. Most parts of India including Gujerat, Kutch and Saurashtra. Resident in some areas and local migrant elsewhere.

NESTING. Season—March to June. The nest is placed in holes in banks and in rocky cavities near the ground, not much above the water-line, and sometimes under bridges. It is made of grass and rootlets, mixed with sticks and lined with wool or hair. It is fairly well-built in the shape of a shallow cup and two to four eggs are laid; they are whitish with yellowish-khaki splashes, more on the broader end; some eggs have scrolls at the broader end. Ideal spots for

nesting are the Machhoo, the Bhāder, the Shatrunji and such other large rivers. On the Shatrunji river, I found the birds nesting all along the banks, but not as regularly as I expected, for some years hardly a pair or two may be seen to nest. Nevertheless, their beautiful song may be heard regularly during February, March and April. At Jasdan, I found a pair feeding its young when the Alam Sagar Lake was full in May. The nest was close to the water and under a slab of a rock. The birds seem to nest where water conditions are good and food easily available. The breeding territory varies from half-a-mile to two miles apart. Some nests I found were in the cover of a thorny bush on the bank and close to the water's edge. In fact, most nests are close to water. The birds allow close approach when nesting and thus often reveal their nests. One I found at the edge of a small stream (Torania) in the Barda Hills was on an open rock, quite unconcealed though inconspicuous.

FOOD. Insects. The birds may be seen feeding in the open 'Doob' grass away but not very far from water. However, they generally feed at the waterside. They feed in pairs not far from each other, and I have seen many pairs on streams in the Gir Forest during Winter and Summer.

INDIAN WHITE WAGTAIL

Gujerati Name—Diwāli Ghōḍō

Motacilla alba dukhunensis SYKES

See Coloured Plate 30.

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. Upper-parts, ash-grey; forehead, white; sides of head, white; crown to nape including chin, black. During the breeding season, the grey area on the nape is larger. Tail, blackish; central tail-feathers, white and conspicuously seen while in flight. Bill, legs and eyes, black. Under-parts, white. The female may be differentiated from the male by her less neat black head and breast and a duller forehead. The birds vary a good deal in the amount of black and white on the head and breast. They are very common from October and remain with us until March. They are easily recognised by the continuous up-and-down dipping of the tail. The flight is undulating with a rapid intermittent wing-beat.

NOTES. The Wagtails come in large numbers and are quite tame, allowing close approach. They are, however, restless birds and always seen running and turning to pick up insects. They are amusing to watch and any green patch such as a lawn, however small it may be, attracts them. The call is a ringing one, emitted as the bird rises. It has a melodious song, best heard just after

it arrives, or about February-March when it is about to leave. It is found where there is greenery and water. It is named 'Diwāli Ghōḍō' because it arrives about Diwali time. However, many come much earlier and are seen at Dasherā time in October. The reason for the continuous movement of the tail is a question difficult to answer. Personally, I firmly believe, it has something to do with helping the bird to flush minute insect life. I have regularly observed Wagtails suddenly becoming immobile and stopping the wagging of the tail as a warning signal of a Bird of Prey approaching. The idea of confusing a likely enemy by the constant wagging of the tail seems rather improbable though possible. The long tail, of course, helps to balance the bird while turning in the air and on the ground. It may be noted that the bird often sways its body while wagging its tail. Although Wagtails are often seen roosting and migrating in flocks, they seem to remain in pairs where they have established their feeding grounds, e.g., in small gardens. The birds close to habitation sometimes enter verandahs to keep out of the hot sun. They readily perch on houses, walls and trees but are nearly always seen on the ground. They are good mimics and songsters.

DISTRIBUTION. Breeding in Western Asia and migrating south and east of its range. Found commonly throughout India and Saurashtra during the Winter months.

FOOD. Small insects including moths and butterflies picked up and caught from and above the ground. Wagtails often fly into the air to catch their prey. For feeding they prefer open fields, short grass, lucerne, carrots and other types of vegetation, especially near the waterside. Green lawns attract them the most. The birds are seen picking off caterpillars from low vegetation. However, most of their feeding is done by flushing small insects off the blades of grass. They are seen running to catch food. The movements in search of food are irregular. Almost all the Wagtails are beneficial to agriculture as they feed on harmful insect life and their larvae.

INDIAN GREY SHRIKE

Gujerati Name—Dūdhio or Moṭō Laṭorō

Lanius excubitor LINNAEUS

See Coloured Plate 25.

SIZE. About that of the Myna with a relatively longer tail.

IDENTIFICATION. A grey bird with a broad black stripe extending across the eye. Wings and central tail-feathers, black with a conspicuous white patch on the wing, seen easily during flight. The tail is about the length of the

body. When closely seen, the bill, which is black, has a protruding hook at the tip. Lower-parts, white. Sexes alike. This is a common bird seen amongst cultivation, open fields studded with thorny bushes, thorny forest and wooded areas. It is generally seen singly sitting on the top of a hedge, thorny bush or tree. The flight is low and straight over the ground. The common call is a harsh *kwi-rick, kwi-rick*. It is not a shy bird, often allowing close approach. It is an excellent mimic of other birds and seems to take full enjoyment in doing so.

NOTES. The Grey Shrike is a common bird and, though it is seen singly, its mate is usually not far away, being perched on another solitary bush in open country. The body-pose is generally more vertical while perched on a branch or on top of a thorny bush. The birds are prone to local movements, the food factor determining them. They are sometimes kept by bird-fanciers for their mimicking abilities, and also by falconers who have managed to train them to catch house geckoes and small birds.

DISTRIBUTION. The whole of India including Saurashtra. Resident.

NESTING. Season—March to June is the usual season but eggs may be found between July and September. The nest is placed in a thorny tree or bush. It is made of grass, roots, wool, rags and such other material to which snake-slough is invariably added. The nest is fairly large for the size of the bird, the outer appearance being untidy while the inside is a fairly neat and well-lined cup. The eggs number three to five and are greenish-white varying to pale pinkish-white with ginger and lavender spots. Both birds incubate. The nest may be placed quite close to habitation or away from it; sometimes the same trees are used year after year.

FOOD. Insects, *e.g.*, beetles, locusts, grasshoppers, crickets, wasps, centipedes, caterpillars; also small snakes, lizards, and small birds. Most of its prey is captured on the ground, the bird watching out from the top of a bush or tree and then flying down to pick it up. It preserves its surplus food by impaling it on thorns in different places and feeds upon it when hungry. Personally I have not seen a proper larder and feel that owing to climatic conditions and the attention of other animal life, a larder would not survive.

BAY-BACKED SHRIKE

Gujerati Name—Pachnāk Laṭorō

Lanius vittatus VALENCIENNES

See Coloured Plate 25.

SIZE. About that of the Bulbul.

IDENTIFICATION. This is the smallest of our resident Shrikes and is characterised by its upper-parts and back being dark reddish-brown or maroon with the head, neck and rump ash-grey. Lower-parts, creamy-white to buff; flanks, reddish-brown. Like all Shrikes, it has a black stripe across the eye with the forehead blackish. Bill and legs, black. The tail has the basal portion grey, the central feathers are black and the lateral feathers are black and white. Lower-parts, white. In flight, the round white patches on wings known as 'mirrors' are clearly seen. Young birds are almost uniform brownish-grey with faint barrings on flanks, and a faint eye-stripe. This species is seen in forest as well as in cultivation, entering gardens occasionally. It prefers wooded areas, thorny forests and sparsely populated trees. Sexes alike.

NOTES. This small Shrike is not found everywhere and is more of a seasonal bird, migrating locally from one place to another. At times it appears fairly common and at others it is absent, completely disappearing from the area where it may have been seen quite regularly. To the bird student, it is a handsome little bird but its presence is often overlooked. It has a harsh low-pitched whistle and it is a fairly good mimic. Like all other Shrikes, it waits on tops of bushes and trees to spot beetles and such other prey. Then it flies or glides down to pick up the prey, returning to the same or a nearby tree. The birds are very tame in open cultivated areas.

DISTRIBUTION. Most parts of India including Saurashtra. Resident. Fairly common from February to August.

NESTING. Season—February to June. The nest is placed in a thorny bush and is rather an untidy mass of varied material ranging from grass, roots, leaves, rags and wool. It is a cup-shaped nest and, in its outer appearance, somewhat resembles that of a squirrel. The outskirts of thickets are likely places to find a nest. The eggs number three to five and are smaller editions of those of the Grey Shrike.

FOOD. Small beetles, crickets, grasshoppers and mostly ground insects. Also wasps and bees. I have seen a bird impaling insect after insect on separate thorns in order to preserve the food to be eaten at leisure.

RUFOUS-BACKED SHRIKE

Gujerati Name—Kāthiāwāḍi Lātorō

Lanius schach LINNAEUS

See Coloured Plate 25.

SIZE. Between the Bulbul and the Myna with a relatively longer tail.

IDENTIFICATION. Characterized by grey upper-parts followed by rufous. Rump, pale rufous. In size, it is almost as large as the Grey Shrike. The under-parts are white with rufous-yellow on the flanks. While in flight, there are sometimes seen two inconspicuous small patches of white on the wings. The body-pose is particularly upright, especially when the bird is perched on a bush or a tree. This bird inhabits forests, plantations, cultivated areas and gardens. In habit it is a typical Shrike. The call is a sharp resounding *kwi-rick* or *chewes* which may be heard a great distance away. It is reminiscent of that of the Franklin's Nightjar. Sexes alike. Young birds are buffy-rufous and have wavy bars on the under-parts; the grey and reddish patches on the back are darker.

NOTES. Although these birds are found in open cultivation, they prefer to remain in greener vegetation and in forested areas. Sometimes, they appear to be shy when in woods but otherwise usually allow fairly close approach. During the breeding season, they are definitely more noisy than any of our Shrikes, calling frequently to each other. They also have a pretty song and are excellent mimics.

DISTRIBUTION. Western India and the whole of Saurashtra. Fairly common. Resident. The race found in Saurashtra is *kathiawarensis*.

NESTING. Season—March to October. At this time of the season they may be seen in pairs, and the nest is preferably placed in a thick bush in fruit orchards, plantations or jungle, where it is fairly well-concealed. It is made of twigs, roots, grass, hair and other odd material and is a fairly deep cup. The eggs number three to four and are pinkish-white with reddish-brown smudges. The nest is not always easy to find and the birds are rather shy, often deserting the nest if frequently visited.

FOOD. Beetles, crickets, insects, small birds, lizards, mice and small frogs.

RED-BACKED SHRIKE

Gujerati Name—Pardéshi Laṭorō

Lanius collurio LINNAEUS

SIZE. Same as the Bay-backed Shrike.

IDENTIFICATION. Differentiated from the Bay-backed Shrike by the absence of white patches on the wing; otherwise, in all respects except its slightly larger size it resembles that species. However, I have noticed a slightly more brick-red colouration on the upper-parts. The female is barred on the lower breast and flanks.

NOTES. This bird is found more in cultivation and hilly tracts and has been recorded at Hathab and Jasdan in Eastern Gohilwad. It probably occurs all over the State.

DISTRIBUTION. Breeding from Europe to Persia. Migrating to Arabia, Africa and Western India. Not uncommon in Saurashtra as a regular post-Monsoon and Winter migrant.

FOOD. Insects, etc.



PALE-BROWN SHRIKE

Gujerati Name—Rétio Laṭorō

Lanius isabellinus HEMPRICH AND EHRENBERG

See Coloured Plate 25.

SIZE. Smallish—about that of the Bay-backed Shrike.

IDENTIFICATION. This bird is recognised by the sandy-brown colouration of the upper-parts, and the back and wings mixed with a tinge of grey. The sides of the head, neck, breast and flanks are light reddish-buff to rufous colour, and the tail, which is pale chestnut-red to reddish-brown, is tipped black. Chin and abdomen, off-white. Bill, greyish at the centre and tipped black. Legs, black. The brown eye-streak, not supercilium, is incomplete and not always conspicuous in many birds. The body-pose, while perched, is very upright. Some birds are rather shy, flying low along the ground from bush to bush when approached. They prefer arid country, often close to lakes. They are only seen in the Winter months when they are not uncommon. The absence of the white wing-patch is diagnostic. Sexes alike.

NOTES. They prefer low, thorny, bushy country amongst hills, flat ground or semi-desert waste land. The Rufous Shrike (*Lanius cristatus*), which differs in having the crown more rufous than the body, may also be seen in the same kind of country but is difficult to identify in the field from the above species.

DISTRIBUTION. Breeding in Central Asia, migrating to North-West India, Gujerat and Saurashtra, and also found in Kutch. It is not rare in Saurashtra as a regular Winter migrant.

FOOD. Insects. Same feeding habits as in other Shrikes, but keeping to lower bushes and scantier vegetation. The birds appear to fly comparatively less distance in search of food than other Shrikes, taking their food fairly close to where they are perched.

GREY TIT

Gujerati Name—Rāmachakli

Parus major LINNAEUS

See Coloured Plate 27.

SIZE. That of the Sparrow.

IDENTIFICATION. Colour of head, black with a conspicuous round patch of white on cheeks. Upper-parts, grey with a pale white and darker wing-bar on wing-coverts. Lower-parts, whitish but with a broad black stripe running from the centre of upper-breast to the lower-abdomen. Bill and legs, blackish. It is also recognised by its habit of moving from one branch to another in a restless manner. Sexes alike.

NOTES. It is usually found in forested areas, occasionally visiting gardens where the forest is nearby. It is a very attractive little bird with a common call like *wee-which*, frequently uttered while on the move. It also has a call like *wee-chicherrr*. It is normally seen flitting from one tree to another in search of food, and moves from one area to another singly or in pairs, guided by each other's calls. The birds are not rare in their own habitat.

DISTRIBUTION. Forest areas of Western, Central and Peninsular India, including Saurashtra. Commonly seen in Junagadh, the Girnar, the Gir Forest and the Barda Hills. I have also found it in the Sihor Hills and the Sha-trunjaya Hill at Palitana (Gohilwad). It is rare in Bhavnagar. It is resident in all these areas though rarely seen breeding in the Sihor Hills. It is a local migrant in other parts of Saurashtra. (See Map 12.) The race found with us is *stypae*.

NESTING. Season—June to August. Most of the eggs are laid during the Monsoon. They are white, spotted with reddish-brown. The nest is invariably placed in the hollow of a tree, branch or stump, or in such other cavity. It is made up of fibre, grass, leaves and rootlets, and lined with soft hair and grass. During the breeding season the bird is abundant in the Gir and fairly common in the Barda Hills. It breeds in fair number at Junagadh. On the Shatrunjaya Hill, I found nests in holes at base of trees.

FOOD. Small insect life and their larvae. It is an active feeder flying from tree to tree and branch to branch inspecting leaves for insect life and caterpillars. All sorts of poses are assumed when minutely searching for food in crannies, under a bark or among leaves of trees. It seems to be a very useful bird.

THICK-BILLED FLOWERPECKER

Gujerati Name—Phūl Sūṅhaṇi

Dicaeum agile TICKELL.

SIZE. Much smaller than the Sparrow.

IDENTIFICATION. A very small drab looking bird with the upper-parts greyish-olive and a pale greenish tinge on the rump. Lower-parts, oily pale yellow with a few streaks on the breast. Chin and cheeks, whitish. Eyes, reddish; legs, dusky; bill, short and thick, greyish in colour. Tail, short and brownish, tipped slightly with white.

NOTES. These birds may be seen in small groups amongst shady trees and mango orchards during Winter. They frequent tall trees. The call is a sharp characteristic *chip-chip* constantly uttered, from which their presence is immediately known.

DISTRIBUTION. Most parts of India. Resident or locally migratory. Found in Gujarat, absent in Kutch, and uncommon in Saurashtra but presumably resident in the Gir and the Girnar. A specimen was sent to me by the Yuvaraj of Jasdan from Jasdan in which area he has seen it regularly.

NESTING. Season—February to June. The bird builds a purse-shaped nest which is soft and elastic, much like that of the Sunbird but of uniform soft material. It is placed from 4 to 40 feet high. The eggs are white. Littledale and Betham found this bird breeding in Baroda.

FOOD. Fruit, nectar and insects. The birds may be seen visiting 'Loranthus' plants from which they obtain most of their food.

PURPLE SUNBIRD

Gujerati Name—Phūl Chakli

Nectarinia asiatica asiatica LATHAM

See Coloured Plate 24.

SIZE. Much smaller than the Sparrow.

IDENTIFICATION. Male: A small inky-black bird having a metallic sheen of blue, green and purple when seen in the sun. In full plumage, there is an orange-yellow spot under the wing which is not always apparent. The bill is black, slightly curved and fairly long. Legs, black. Female: Light olive-brown on the upper-parts, and pale creamy-yellow on the lower-parts; the bill and legs are blackish. The male in non-breeding dress, which he usually assumes between the Monsoon and the end of Winter, is similar to the female, but can be identified by a black stripe running from the throat to abdomen, and by the brighter yellow colouration. This is another of our common birds which is found in gardens, forests, cultivation, and countryside to almost desert country. It is seen flitting from flower to flower, often hanging upside down to get its slender curved bill into blooms or curled up leaves. While feeding on small or thinly stalked flowers, it hovers like Humming Birds with the body kept immobile while the wings beat in rapid succession. During the breeding season, the male pours forth his sweet though rather monotonous song from the top of a tree or a slender branch fairly high up. Telegraph wires are frequently used for perching. The common call is a short whistle which is often uttered, and resembles a *wheet-wheet*, much like that of the Indian Robin though shorter and softer. These birds are not shy and are often found next to habitation.

NOTES. This species is one of those which can fly backwards. The tremendous speed of the wing-beat, at times reaching 200 wing-strokes per second, makes the wings appear as a blurr. These birds have been associated with Man for a long time, and have lost much of their fear. Flower gardens attract them in large numbers. They are not found in groups, though a pair or a family may be seen together for a short time. They are pugnacious during the breeding season, keeping to their established territory from which they chase away intruders. At this time they seem full of energy. The breeding display is seen in various phases. To begin with, the male hovers rapidly in mid-air, returning to his perch immediately. This is done repeatedly. Then, there is a fluttering of wings accompanied by a song at the close approach of a female. And the third phase is a flight, almost vertical with fluttering of wings, which is often followed by the chasing of the female. The post-nuptial plumage is usually seen from September to December or January. Young birds are brighter yellow on the lower-parts than the parent female; otherwise they look alike.

DISTRIBUTION. Most parts of India including Saurashtra, Gujerat and Kutch. Resident and common.

NESTING. It is difficult to define the nesting season of this bird for it breeds almost throughout the year except perhaps for a few months during the heavy rains. The main season commences in February and ends about July. Then, again, I have seen the birds breeding in October and found nests in November and December, but this is rare. The nest is placed low, one to eight feet from the ground, on a bushy creeper or similar plant. Stunted trees of a thorny kind are often made use of. The birds nest in gardens, forests and open country sparsely studded with trees, and also in semi-desert country. Odd places like unused electric light plugs in houses have been utilised. They prefer nesting close to habitation. Walls and hedges are favourite sites. The nest is a pendant or oval in shape with the entrance hole on the upper half; above the entrance is a small roof-like projection which makes it less visible. It is made of cobwebs, dry leaves, seeds and insect cocoons, and this often extends below the actual nest-chamber, giving it a tapering appearance. In most cases the nest is camouflaged and looks like some old cobwebs or such like debris hanging on a bush. Once spotted, however, it appears much more conspicuous than it really is. The entrance hole generally faces away from the open side. The inner lining is always soft, consisting of wool and fluff of seeds, such as of *Calotropis*, etc. The nests are built close to roadsides, houses and other habitations where they get greater protection from destructive birds such as Tree Pies and Crows. The birds also nest in jungle areas. The eggs number two to three, and are dull greyish-brown. Some have minute specks or streaks of grey; others have a dark ring at the centre or are capped at the broad end.

FOOD. Nectar, minute insects, termites and spiders, especially the latter during the breeding season for feeding the young and also during the period when flowers are scarce. The birds are often seen inspecting dried curled up leaves which harbour spiders and insects. I have seen them breaking open thick cobwebs from which hundreds of small spiders had emerged. Nevertheless, their principal food is nectar, and they visit each and every flower in the same way as do butterflies. I always associate flowering trees and gardens with this bird. The male and female immediately attract the eyes as they chase each other from flower to flower, emitting their short characteristic whistle.

WHITE-EYE

Gujerati Name—Babūnā

Zosterops palpebrosa TEMMINCK AND SCHLEGEL

See Coloured Plate 23.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. A small delicate greenish-yellow bird with a conspicuous white ring round the eye. Upper-parts, greenish-yellow to olive green; head, slightly lighter; yellow on the upper-breast; forehead and throat, yellow. Lower-breast, light grey; flanks and abdomen, white; tail, blackish. Bill, black; legs, slate. Seen in pairs or in groups of three to twenty birds. They are very active little birds keeping to tree-tops and preferring evergreen trees. They are often seen looking into flowers and under leaves, turning upside down in their effort to find food. They constantly emit short calls sounding like the subdued tinkling of small bells which makes their presence immediately known. During the breeding season, the male sings sweetly though rather monotonously on tops of trees. The birds are invariably seen on the move and soon fly out of sight. They have a preference for forest, gardens and thorny-scrub jungle. They are not uncommon during Winter when they are seen in small groups but they do not remain in one place for any length of time, keeping always on the move. In forested areas, however, they are seen with more regularity. The race *amabilis*, found in Saurashtra, is similar to *z. p. egregaria* but with bright yellow forehead and brighter throat. Also, it differs from *z. p. occidentis* by its citrine, not olive-green, upper-parts and by the whiter flanks and abdomen.

NOTES. This is a popular cage-bird though not kept for its song so much as for its bright colour. With us, it is seen mostly in wooded areas, and in gardens where there are shady trees. The early morning is the best time to observe these birds. Once paired, they are devoted to each other and are always seen together. They are locally migratory, but resident in forested areas. Their restless habits somewhat resemble those of the Minivets but they are much more partial to foliated green trees, a background with which they blend well. They roost among leaves.

DISTRIBUTION. The most parts of India, the whole of Saurashtra and Gujerat as resident and a local migrant; absent in Kutch. In Saurashtra, the race *amabilis* breeds in the Gir Forest, the Girnar and the Barda Hills, and also on the Shatrunjāyā Hill, Palitana.

NESTING. Season—May to September, the principal months being from June to August, just before and after the rains have set in. The birds prefer trees matching their own colouration and having large leaves though this is not

always the case. At Khambhala (the Barda Hills), I found nests low down in bushes and gardens. In the Gir, "Jambuda" (*Eugenia*) trees on banks of rivers, and bushes in and near river beds are places to look for their nests. An overhanging branch is the favourite site for nesting, and a neat round nest of grasses completed with cobwebs is fixed between two slender off-shoots at or near the end of the branch, well-concealed with scanty leaves. The nest is woven and it is a small replica of the Golden Oriole's nest but more cup-shaped; once located, it does not then seem to be well-hidden. However it is not easy to spot from underneath. The eggs number two and are pale blue. Some nests may be found quite close to each other while others may be a fair distance away. While incubating, the birds are not shy as they rely upon their blending colouration, much like the Ioras.

FOOD. Small insects and nectar. They feed together, each one selecting its own flowers. They fly from tree to tree, emitting their characteristic tinkling calls.

GREY-NECKED BUNTING

Gujerati Name—Patharāḷ Gaṇdam

Emberiza buchanani BLYTH

See Coloured Plate 31.

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. Head and neck, light ash-grey. A conspicuous white ring round the eyes, and a dark brownish stripe running from the bill to the lower-face like moustaches. Lower-parts, pale pinkish or warm orange-buff; back and upper-parts, brownish-grey. The tail is brownish, with the outer tail-feathers white which are clearly seen when the bird is flying up from the ground. Body posture, more upright while perched but horizontal when on the ground. Bill, brown; legs, pale yellow to fleshy. These Buntings are found in scrub jungle and also in open arid country. I have frequently seen them taking refuge in not a very thick thorny scrub jungle. They are usually seen in flocks of eight to 15 birds, sitting on the ground in complete camouflage only to rise on close approach and to settle on neighbouring trees. They emit a chirp as they fly; otherwise they are normally silent birds. Sexes alike.

NOTES. These birds suddenly arrive in a locality, stay for a short period and then depart. They seem to keep to the same feeding ground for a number of days before migrating to another. The student should look for them in low but

not too thick scrub jungle, and in open country, amongst rocks and bushes. They are, however, seasonal birds and seldom found when looked for. They arrive in September and depart about April.

DISTRIBUTION. Breeding in Turkestan, Siberia, Persia, and Afghanistan to Northern Kashmir, and migrating south to India and most parts of Saurashtra, Kutch and Gujerat. They are not uncommon and are fairly regular migrants.

FOOD. Seeds.

BLACK-HEADED BUNTING

Gujerati Name—Kālā Māthānō Gaṇdam

Emberiza melanocephala SCOPOLI

See Coloured Plate 31.

SIZE. Between the Sparrow and the Bulbul.

IDENTIFICATION. Practically the whole crown to chin, black. Lower-parts, entirely yellow to bright yellow. Back and wings, rich chestnut-brown to reddish-brown, forming a patch on the upper-parts. Bill and legs, brown. Body-pose, upright when perched but horizontal while on the ground. Female, drabber all over and dusky-brown, much like a female Sparrow. This Bunting may be found in any sort of country. I have seen it in scrub jungle and in patches of thick 'Babul' close to water. It is also found in cultivation. It is not very shy though it takes alarm at the slightest noise. Yet it will allow close approach while perched during the hot hours, and sometimes while feeding although it is then much more alert.

NOTES. These birds are migratory and very seasonal. They are seen in flocks of 15 to 20 birds, rarely over 50, and at times only a few pairs. The best time to look for them is October-November and then again in March-April when the males are recognisable by their black heads and bright yellow plumage; they may then be seen in cultivation close to trees. While resting in green trees, they become completely immobile and camouflage themselves in a perfect manner. Once they feel they have been seen, they immediately take wing. The flight is undulating and the birds rise into the air fairly fast when disturbed, often swinging upwards in wide circles and sometimes emitting their characteristic chirrup. A subdued song is heard during Winter.

DISTRIBUTION. Breeding in Eastern Europe and Western Asia, and migrating during Winter to India including Saurashtra, Kutch and Gujerat. Uncommon but regular migrants in Saurashtra.

ROSE-FINCH

Gujerati Name—Gulābi

Erythrina erythrina PALLAS

See Coloured Plate 31.

SIZE. A trifle larger than the Sparrow.

IDENTIFICATION. The male is deep crimson to brick-red, brighter on the breast and head. Eye-stripe, rufous-brown. Under-parts, rosy-pink; back, rump and tail, dull rose-coloured. The female is browner. Found in 'Babul' patches near rivers, or near water in jungles. It is rather a shy bird and not often seen.

NOTES. The male is a very handsome bird with its rosy-red plumage which assumes a brighter appearance during the breeding season. I have never seen large flocks but have only met with pairs which are sometimes mixed with Buntings.

DISTRIBUTION. Winter visitor in India—several races. In Winter I have seen it occasionally in Eastern Saurashtra, but it may be found all over the State. Uncommon though a regular migrant during Winter. Found in Kutch and Gujarat.

FOOD. Fruit and seeds.

YELLOW-THROATED SPARROW

Gujerati Name—Pahélwān Chakli

Petronia exanthocollis BURTON

See Coloured Plate 31.

SIZE. That of the Sparrow.

IDENTIFICATION. Upper-parts to tail, pale-brown; wing-coverts, darker brown, with two white wing-bars. On the throat is a bright yellow patch which is invisible from distance. Lower-parts, whitish. General appearance much like a female Sparrow, but distinguished by the tail being slightly forked instead of square. Sexes alike. However, the male has a yellowish forehead and a brighter reddish-brown patch on the lesser wing-coverts. The song somewhat resembles that of the Sparrow but is much faster with a sudden ending to it. The Yellow-throated Sparrow is arboreal but often seen perched on telegraph wires and posts. It is found in thorny forests and gardens and quite close to habitation. It is a shyer bird than the House Sparrow and is not seen in large flocks.

NOTES. There is a belief with Indian bird-fanciers that the yellow patch on the throat serves as a protection to the bird and reasonable pressure on the throat will not kill it.

DISTRIBUTION. The whole of India and Saurashtra. Resident and fairly common.

NESTING. Season—February to August, rarely October-November; later nests usually contain second broods. It makes its nest in holes in trees, cavities, pipes and hollow telegraph posts. The nest is made of grass and lined with feathers. The eggs number four and are similar to those of the House Sparrow. The Tree Pie is its great enemy but it usually selects sites where the Tree Pie cannot enter. I have often seen the Tree Pie make vain attempts to enter ventilation pipes on houses in which the Sparrows were nesting. The birds are wary and, quite unlike the House Sparrow, do not enter the nest-hole while being watched at close quarters.

FOOD. Seeds and insects.

HOUSE SPARROW

Gujerati Name—Chakli

Passer domesticus LINNAEUS

See Coloured Plate 31.

SIZE. Smaller than the Bulbul.

IDENTIFICATION. The Sparrow is too well-known for description. The male differs from the female in having a richer brown colour on the upper-parts, a black patch on the chin and breast, and a black broad stripe from the bill to the nape. Head, brown mixed with ash-grey. Some males, however, differ from others in having the black more pronounced and the colour of the body richer, or sometimes even paler.

NOTES. The Sparrow has been associated with mankind for centuries. It is frequently seen entering houses where it may become a great nuisance at times. At night, while the birds are not breeding, they roost in thick hedges and such cover as they can find to hide in safety. Before roosting at dusk, they make a continuous chatter which can be heard from a distance. Many are preyed upon by cats and Hawks, inspite of which their number does not seem to diminish. The males are very pugnacious and fight vigorously. It is a common sight inside a house where there is a mirror to see a male pecking at the glass and puffing out his feathers aggressively, thinking his own reflection to be a rival.

While engrossed in fighting, the birds can be caught by the hand. They fight so viciously that they often fall to the ground. They may be seen to copulate frequently, the female often attracting the male for this purpose. Pseudo-copulation is also seen. This characteristic seems to be well-developed in this species. The birds are noisy and emit a sharp *chee-chee*.

DISTRIBUTION. The whole of India and Saurashtra. Resident.

NESTING. Season—the whole year round. The birds are prolific breeders. The nest site may be anywhere, where there is room for the nest: holes in walls, banks, trees, etc.; but when houses are available, they will build in almost any place, *e.g.*, backs of pictures, lamp shades, and such other odd places. They are a thorough nuisance in the house, for they bring in all sorts of dirty material, mostly grass and feathers. The best method to prevent this is to supply a square nesting box with 1½" dia. hole in it. The nest is made of grass piled up into an untidy heap, much of it falling to the ground. Inside, it is lined with soft feathers. If nests are removed, the birds rebuild again with twice the energy and seem undeterred. The eggs number four to six, and are oval and whitish, splashed irregularly or streaked with greyish-brown. The colour of markings and the pattern vary considerably but some eggs have a uniform colour.

FOOD. These birds are omnivorous. The young are fed invariably with insects. The Sparrow is considered a very harmful bird as its staple food consists of grains, but proof of its doing much damage is still lacking. It destroys insect life during the breeding season and is often seen boldly entering houses in search of food.

BAYA OR WEAVER BIRD

Gujerati Name—Sūghari

Ploceus philippinus LINNAEUS

See Coloured Plate 31.

SIZE. That of the Sparrow.

IDENTIFICATION. Male: Crown and lower-breast, bright yellow; abdomen, white. Upper-parts to tail, brown with dark streaks, but back often mixed with golden-yellow; face, brown or blackish. Female: Pale brown above, off-white to pale yellowish below, much like a female Sparrow. Bill, blackish in male and horny-brown in female. In non-breeding plumage, the male resembles the female. The body-pose is much more upright than that of the Sparrow. The birds prefer to perch on thorny trees, stems, and tops of bushes. As they arrive before the Monsoon from scrub jungle and woodland

areas, they are mostly to be seen in the plains and may be observed on rivers and lakesides where there are plenty of reeds. They are very noisy birds and one can hear their constant chattering from a long distance which grows louder at roosting time. By May and June the males assume their full plumage which gives them a handsome appearance, and which almost coincides with the beginning of the Monsoon.

NOTES. Just before the rains, hundreds of birds congregate on the waterside to roost on reeds which stand in the water, safe from any predator. After the rains begin and the grass grows knee-deep, the birds begin to nest. Then, during the Winter months, they move to other parts of the country, slowly changing into their sombre dress and becoming inconspicuous amidst the hordes of migratory birds that invade the country. The Weaver Bird is interesting in captivity inasmuch as it can be trained to perform tricks. The professional trainer can teach it to do a variety of performances, e.g., picking a leaf from a tree and bringing it to hand, threading a needle through small beads to make a necklace and placing a cardamom seed in one's mouth from a tray. There are other feats that it can perform skilfully, with patience and effort on the part of the trainer.

DISTRIBUTION. The whole of India. The race found in Saurashtra is *sardar pateli*. Locally migratory and resident. I have noticed it in the hot months, from April to May, in the Barda Hills and other thorny woodlands in Saurashtra.

NESTING. Season—July to October, much depending upon the rains. The nest is like a honeycomb in shape but has a long funnel-shaped entrance attached to it which looks like a tube. It is made of green grass-stems and is wonderfully well-woven. The grass soon becomes dry but the closely woven nest is so well made that the heaviest rains will not penetrate the nest-cavity and the strongest winds will not dislodge the nest which is firmly attached to a slender branch. It is, in truth, an ingenious work of art which no human hand can construct. The males do all the nest-building, forming a colony, and the females mate with the builders of the nests which they have chosen. The male may be seen perched close to the nest or on it, fluttering his wings and emitting a sharp and rather harsh *chee-wiz* call, thus trying to entice the female to accept his nest well before it is completed. Having mated, the female does very little and is constantly urged by the male to enter the nest made for her which she does by flying below the structure and entering it flying almost vertically. However, decorating the interior and such other comforts are left to her while the male assiduously works and toils to finish the exterior. He is pugnacious while on his nest; otherwise he is most sociable. Then, he makes another half nest for himself to live in, and so we see many of these half-made structures. The males are supposed to be polygamous, for they build another

nest and take second wife. While nest-building, they make a frightful noise so that a colony may be located from a distance; the birds keep coming and going, irrespective of being watched at close quarters. Some nests have two egg-chambers; in fact, these are new nests superimposed on old ones. They are, on the whole, rarely seen. The birds visit the same trees year in and year out if conditions for nesting are favourable, though there is no rule to this, for many new sites are selected each year. In the selection of nesting sites, the material close at hand and the safety of the site are two important factors. The sites somewhat vary in spite of the fact that they are nearly always placed on trees. Thorny trees overhanging streams, wells or lakes are favourite sites. Such trees are usually solitary. Palm trees and sometimes sugarcane are made use of, though trees overhanging dilapidated wells are also popular. The nests are built on slender branches, usually well out of reach and safe from predators' attacks. They are often lined with mud. Small and large nesting colonies are a common sight all over the countryside during the Monsoon, ranging from 20 to 200 birds or more per colony. The eggs are white and number three to four. Dead young birds are often seen floating in wells, the result of their unsuccessful first flight.

FOOD. Mostly grain, and also insects during the rains. Insects are also taken to feed the young. This bird is harmful to the 'Jowar' and 'Bajri' crops during the season.

WHITE-THROATED MUNIA

Gujerati Name—Mūniā

Lonchura malabarica LINNAEUS

See Coloured Plate 31.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Upper-parts, light brown; head, darker brown to blackish, mixed with grey. Lower-parts, off-white to very pale almond-cream, Wings, blackish. A white patch on the rump. Tail, black, with central tail-feathers long and pointed. Bill, grey; legs, dark purple; eyes, brown. This small Sparrow-like bird is common and may be seen in open semi-desert, forest, scrub and cultivation. It also readily visits gardens. However, it prefers thorny trees and bushes and is usually seen in groups of 15 to 50; the larger gatherings are seen during Winter. This Munia is not a shy bird, allowing fairly close approach, especially during the breeding season. The call heard in a flock has a close resemblance to that of Myna-nestlings crying out for

food. Another note is a soft and short ringing *chip*. The flight is undulating. Sexes alike.

NOTES. A small group feeding on the ground or in a clump of long grass is a common sight; when approached, they suddenly fly up and settle on a close-by tree, only to resettle on the ground as one departs. The birds move locally a great deal, much depending upon food and water. They seem to prefer the vicinity of lakes and canals during the breeding season. The male courts the female by stretching himself up and bobbing up and down in quick succession.

DISTRIBUTION. Plains of India and the whole of Saurashtra. Resident.

NESTING. Season—practically the whole year round where conditions are favourable. The Munia makes a structure of dry or green grass, depending on the season; but when green grass is used, it dries up quickly. A common grass utilised is *Arstida*. The nest is usually placed in thorny bushes and very near the centre. The structure is ball-shaped and appears very flimsy; the entrance hole is small and placed where least visible though usually on the side. Old nests are often seen broken up and untidy. The new nest is built from the bottom and worked up sideways. It is invariably lined with soft material, usually feathers and fluffy seeds. The birds, while breeding in the Monsoon, seem to prefer the waterside and small islands on lakes. Many nests are placed on small trees and bushes standing in water. Here they are quite safe from the attack of ground predators. The birds generally prefer a site well-protected by thorns. However, I have seen nests situated on 'Gorad' trees (*Acacia senegal*) which themselves are full of thorns and yet the nests were placed quite conspicuously and without much protection. They are never placed very high, and are usually from two to eight feet above the ground except in the case when close to nests of Birds of Prey. I have often found these Munias nesting within a few inches or a foot of nests of birds such as the Short-toed Eagle, the Laggar Falcon, the Tawny Eagle and the Greater Spotted Eagle. It is to be noted that these Birds of Prey do not make slightest attempt to harm the Munias which have nested under their protection. At times, the Munias prefer to nest close to habitation.

The Munia does not always construct its own nest; it seems the safety factor is all important with this species. Many times have I found the eggs of the Munia in the nests of Weaver Birds. The eggs number 5 to 15, and are white and oval. It is possible that two females lay in the same nest together.

FOOD. Mostly grass seeds. They are generally seen feeding on the ground and in long grass or low scrub.

INDIAN SPOTTED MUNIA

Gujerati Name—Bhārati Ṭapkāvāli Mūniā

Lonchura punctulata LINNAEUS

See Coloured Plate 31.

SIZE. Smaller than the Sparrow.

IDENTIFICATION. Whole upper-parts to breast, brown or pale chocolate. Lower-parts, white with grey circles or semi-circles on flanks. Legs, greyish; eyes, reddish-brown. The tail is squarish. This Munia visits deciduous and mixed scrub forests and watered areas. It may be seen in pairs or small groups. It is not shy. Sexes alike.

NOTES. I have come across a few of these birds in the Gir. Although I did not find any nests, a few pairs may certainly breed there. Other records are wanting except of a pair that was noted in the Victoria Park at Bhavnagar many years ago. In the Gir, drying pools and streams should be observed during the hot hours of the day. A pair may be seen coming to drink and to settle amongst the shady trees. Couples are seen sitting close together when at rest.

DISTRIBUTION. Most parts of India including Gujerat; rare in Saurashtra; absent in Kutch; presumably resident in the Gir in very small numbers.

FOOD. Seeds and insects.

BRAHMINY OR BLACK-HEADED MYNA

Gujerati Name—Babbai or Brāhmaṇi Ménā

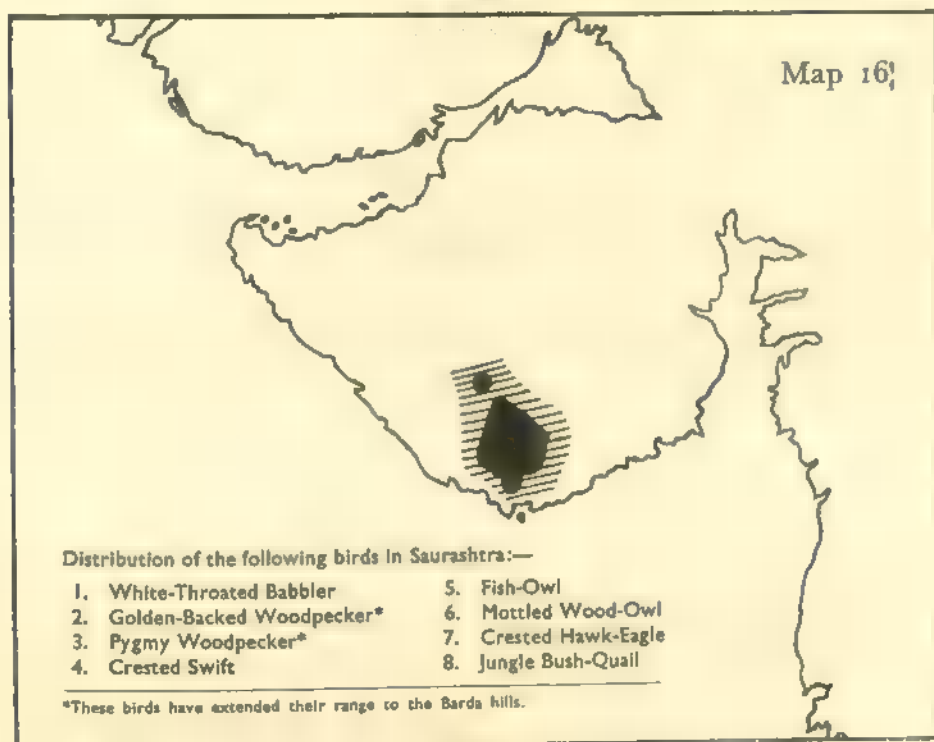
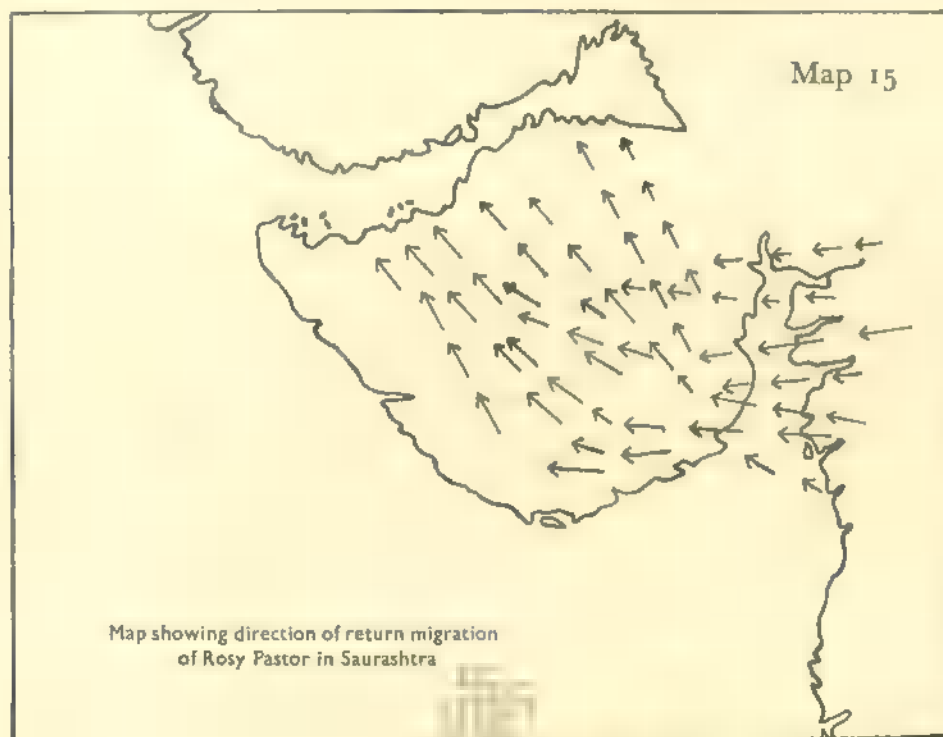
Sturnus pagodarum GMELIN

See Coloured Plate 32.

SIZE. Slightly smaller than the Common Myna.

IDENTIFICATION. Body, light to rich almond colour; richer in the males. Upper-parts, light grey. Primaries, blackish. Under tail-coverts, white. There is a long black crest which lies flat but can be erected at will. Bill, yellow with a blue base. Legs, yellow. Eyes, light grey. Sexes alike.

NOTES. The Brahminy Myna is an excellent songster and a mimic of other birds. For this reason it is caught and kept in cages by bird-fanciers. During the breeding season, it is heard singing everywhere in pairs, the male erecting his crest while singing and seen alighting on posts, roofs and tops of trees. The birds are found in all types of country though seen and heard mostly during the breeding season. At that time, that is, in the hot season and the Monsoon,



they become very friendly and are heard bursting into full song. They suddenly appear in pairs from the end of February to March which coincides with the commencement of the hot weather.

DISTRIBUTION. The whole of India and Saurashtra. Resident but prone to local movements.

NESTING. Season—April to August. The bird nests in holes of trees, banks, hollows and cavities and under the tiled roofs of buildings. Any odd material is used for building, *e.g.*, twigs, wool, leaves, etc. The eggs, three to five, are blue in colour. They vary from deep to pale blue and are oval in shape. The principal months of laying are June and July.

FOOD. Insects and fruit.

ROSY PASTOR OR ROSE-COLOURED STARLING

Gujerati Name—Vaiyō

Sturnus roseus LINNAEUS

See Coloured Plate 32.

SIZE. About that of the Myna.

IDENTIFICATION. Head and neck, glossy black; whole body, pale pinkish-white to pinkish, very drab and colourless during Winter. Wings and tail, black. In sunlight, the head has a purple and green metallic sheen. Bill, carmine or pink, but yellowish in Winter; legs, brown. The female is paler and browner, with small white specks on the breast. The bill is brownish-yellow. Eyes, brown. These birds are normally found in flocks ranging from ten or fifteen birds to a few thousand.

NOTES. Small flocks of badly moulted birds arrive as early as July. They are seen entering scrub jungle and feeding on insect life. By October the birds are seen teeming over the countryside. Large flocks are seen wheeling and changing their course in the air, seeking suitable feeding grounds. At Diwali time, when the crops are ripe and about to be harvested, large flocks alight on them and are seen flying from field to field. At this time, the farmers say, the birds destroy much of their grain. The Starling certainly takes his share but in return destroys much harmful insect life. In mid-Winter these birds are still seen in very large numbers congregating for their return flight. They seem to come and go from district to district and across the sea to the mainland. About February, large flocks are returning and we may catch sight of what appears to be a cloud of smoke. The cloud rises and comes closer and closer only to reveal

itself to be a huge flock of Rosy Pastors. From February to April, the birds are seen flying from east to west. They are coming over the Gulf and preparing to fly northwards back to their breeding grounds. However, March and early April is the real time for the return migration when innumerable birds are seen to roost in large trees, making a tremendous noise which can be heard a great distance away. They maintain their chattering call during the day while feeding, and at sunset before roosting. During the whole period of migration, the Rosy Pastor is constantly preyed upon by Hawks of various kinds, thus supplying them with ample food, and many are killed out of millions that arrive, making no noticeable difference to their number. When a flock is attacked, it dives down. Some birds drop to the ground to escape a direct swoop and seek cover even of the smallest kind. A bird or two may remain under cover until danger has passed. A flock may divide into two and get scattered for a time when suddenly attacked. If, however, some cover is near at hand, it takes immediate advantage of it. In the Punjab, these birds are caught in nets and eaten. The flight is normally straight though whole flocks change their course often in search of favourable feeding grounds, and in the distance we often witness a mass of black spots appearing and disappearing as they turn. I have, however, regularly found solitary birds, while on their return migration, visiting each day for a week or so the same little bush which supplied them with food.

DISTRIBUTION. Breeding in Europe and Western Asia to Northern Siberia. Migrating to India including Gujerat, Kutch and the whole of Saurashtra. Common. The earliest record of arrival is the first week of July (Bhavnagar).

FOOD. Insects, grain and fruit. From July to September, the birds feed mostly on insect life and nectar of 'Kerda' (*Capparis*) flowers. They have been seen to feed upon grasshoppers, locusts and their larvae from grassland as well as young crops. From October onwards, they feed mostly on grain and insects. From February to April, they seem to feed much upon the fruit of 'Piloodi' (*Salvadores*) and *Ficus* trees. In this way, their diet is mixed and seasonal. These birds, on the whole, seem to be more beneficial than harmful, destroying a large number of harmful insects during and before the growth of young crops. During the fruiting season, they eat the fruit and disperse the seeds for germination.

STARLING

Gujerati Name—Kālō Vaiyō

Sturnus vulgaris LINNAEUS

See Coloured Plate 32.

SIZE. Slightly smaller than the Myna.

IDENTIFICATION. This is a glossy black bird with a green and purple metallic sheen and finely spotted with white. Bill, yellowish. These birds may be seen in small flocks during the Monsoon and Winter. The flight is straight. To the student, it is only on close approach that these birds can be separated from the Rosy Pastor. Sexes alike.

NOTES. The sub-species recorded by me in Bhavnagar appears to be *Sturnus v. poltaratzskii*. The birds collected by me at Vinchia, near Jasdan (December, 1951), belonged to the above race. They were seen following cattle. When the Starling is in flight, it appears more compact and the flight seems shorter than that of the Rosy Pastor.

DISTRIBUTION. Breeding in Central Asia and Turkestan, and extending to Kashmir and Pakistan in a number of sub-species. Very rare in Saurashtra as a migrant. It has been recorded in Gujarat by Devkar and in Kutch by Lester.

FOOD. Insect, grain and fruit.

COMMON MYNA

Gujerati Name—Kābar

Acridotheres tristis tristis LINNAEUS

See Coloured Plate 32.

SIZE. Between the Bulbul and the Pigeon.

IDENTIFICATION. This bird needs little description as it is one of our commonest birds. The upper-parts are earthy-brown but the head and neck are blackish. The bill is yellow, and the bare skin round the eyes is bright yellow. Eyes, dark reddish-brown. Legs, yellow. Lower-parts from lower-breast, light brick-brown with white abdomen and under tail-coverts. There is a conspicuous round white patch on the wings which can be seen in flight. Tail, brown with white edges. On an average, the female is slightly paler and smaller than the male. The birds are seen in pairs or in flocks in towns, gardens, fields and forests. The flight is straight. The call is a shrill squeak as they take off.

The song is not unmusical. One may see a pair sitting together, the male nodding his head up and down and emitting calls of a varied character, at the same time erecting his crest.

NOTES. This ubiquitous Myna should not be confused with the Himalayan Hill Myna or its relatives which are good talkers and mimics. This bird is seldom trained to talk. Living side by side with mankind, it is indeed a great help to agriculture as it destroys many harmful insects. During the breeding season, however, Common Mynas are a nuisance if they decide to build inside the house as they bring all sorts of rags and dirty material. They are very watchful, for they at once give alarm on sighting vermin, Birds of Prey, monitor lizards and snakes. The alarm note is a harsh prolonged *kékké* *kékké* and a squeak, the latter only used to indicate flying Birds of Prey. I have nearly always found the alarm note signifying some danger. It no doubt warns other birds and even human beings, especially of snakes. They are often seen flying over snakes, monitor lizards and mongooses, emitting their danger signals. So pronounced is this habit that I once saw a few pairs of Mynas press an attack on a cobra and make him turn in defence and raise his head and body with the hood open. And then embarrassed, he immediately slipped into a hole with the bunch of Mynas chasing him. Thus, many a vermin has been betrayed by the watchful Myna which otherwise would have passed unnoticed. During post-Monsoon and Winter months, Common Mynas are found in large flocks and may be seen in great numbers at sunset, flying back to their roosting trees where they create a great noise, often fighting and chasing each other for suitable branches to roost on. The noise can be heard quite a distance away. Large leafy trees are favourite sites. Although the birds may be seen in urban and agricultural land, they also frequent mixed deciduous forest where large numbers may be observed throughout the year. They are often seen fighting or playing with each other. Two birds face each other in a menacing attitude with their claws interlocked, making a frightful noise. A gathering may then alight and watch the display. While in this position, they can be approached so closely as to be caught by hand. This fairly common but strange display may be observed in many pairs or in a single one.

DISTRIBUTION. India and the whole of Saurashtra. Resident.

NESTING. Season—May to September or even April to October. The nest is made of all sorts of varied material: twigs, feathers, rags, leaves, snake-sloughs, etc. The site selected is invariably in some hole or cavity in trees, banks, roofs, wells, etc. If nest-boxes are put up, they readily build in them. I have always done this in my veranda. The full clutch of eggs is five to six. They are beautiful and deep blue in colour. The birds often lay twice in the season, and rarely three times. They also frequently line the nest with the stalks of the 'Neem' tree, but this is not always so. Monitor lizards, cats, mongooses, snakes

and Hawks are a great handicap to them during the breeding season when many eggs and young are devoured.

FOOD. Chiefly insects, fruit and grain. The birds are often seen sitting on the backs of buffaloes and other cattle, searching for food on them and waiting to pick up insects flushed by the cattle. Ficus fruits are their favourite food, and many seeds expelled in the excreta germinate in odd places. The plants found shooting up in cracks on walls and cavities on houses are the result of these birds. The seeds are all manured in the alimentary canal and, when expelled, germinate as soon as suitable conditions prevail. In this way, they are useful in disseminating seeds. At harvest time, they destroy innumerable grasshoppers, caterpillars and locusts, picking them off leaves, grass and ground, and are thus very useful. The birds flock together on the ground while seeking their food. While feeding the young, they bring larger insects as the nestlings increase in size. I have seen them bring in young snakes to feed their fledglings. At times, when insect life is abundant, Common Mynas are a great help to farmers and foresters. They seem to be most useful birds.

BANK MYNA

Gujerati Name—Shirāji Kābar

Acridotheres ginginianus LATHAM

See Coloured Plate 32.

SIZE. Slightly smaller than the Common Myna.

IDENTIFICATION. Differs from the Common Myna in being ash-grey and slightly smaller. Bill and eyes, red, but grey in the young; orange-red skin round the eyes. Wings, black with the usual white patch on them. Tail-tips, buffy. The Bank Myna is rarer than its cousin, the Common Myna; yet it cannot be considered a rare bird in the true sense. These birds are much more prone to local movements. They are associated more with cattle in whose company they are generally seen. They are usually found in pairs or in small flocks.

NOTES. Seen in greater numbers during the Monsoon than during the Winter months.

DISTRIBUTION. Northern India, Gujarat, Kutch and most parts of Saurashtra. Resident and local migrant. Not uncommon.

NESTING. Season—June to September. The birds nest mostly in holes on banks and wells. The nest is made up of grass, feathers, wool and

snake-sloughs. The eggs number four to five, and are deep blue, exactly like those of the Common Myna.

FOOD. Insects and fruit. This is a useful bird.

JUNGLE MYNA

Gujerati Name—Vana Kābar

Acridotheres fuscus WAGLER

SIZE. Same as the Common Myna.

IDENTIFICATION. Distinguished from the Common Myna by the absence of yellow skin round the eyes, the base of the bill including the gape being blue; also, by a tuft of feathers on the forehead. However, this last characteristic is sometimes confusing as some Common Mynas have the feathers on the crown obsolete, thus giving the impression of a tuft near the forehead. On the whole, the bird appears darker than the Common Myna but is difficult to be distinguished from it in the field from a distance as the former species readily mixes with the latter. The eyes are either yellow or bluish-grey, while in the young they are grey.

NOTES. I have come across some birds in the Gir Forest but doubt whether they are resident there.

DISTRIBUTION. Practically the whole of India except the driest parts. The bird is found in forested areas of Gujarat and Saurashtra where I have found it mixing with the Common Myna. Resident and local migrant.

FOOD. Insects and fruit.

GOLDEN ORIOLE

Gujerati Name—Pilak

Oriolus oriolus kundoo SYKES

See Coloured Plate 32.

SIZE. About that of the Myna.

IDENTIFICATION. The male is an unmistakable bright golden-yellow bird with black wings, a short black eye-stripe and a tail with yellow and black feathers. Bill, dark to bright red; eyes, red; legs, grey. The female is a much

drabber bird, dull greenish-yellow, paler on the lower-parts and streaked with brown on the breast; bill, much duller. Young males resemble the females in colour and markings but have comparatively redder bill. In fact, the young of both sexes are like the female. The Golden Oriole is found in forests, gardens and wherever there are large evergreen trees. It is also found in fruit orchards, the mango trees being its favourite haunts. The bright golden male is often flushed from thick foliage from whence it flies only to disappear into others. The flight is an undulating and swooping movement. If followed, it will fly in this way from tree to tree giving the bird-lover glimpses of its striking golden-yellow plumage. The birds appear shy, yet at times they allow fairly close observation. The common calls are a *peoo-popi-peoo*, a harsh *kurr* and a *kaon*.

NOTES. In drier zones, the birds appear at the beginning of the rains and remain in suitable localities throughout the rainy season. In more forested areas, they are seen the whole year round, although moving locally. Nevertheless, they are seen at their best during the breeding season, just before and after the Monsoon breaks. I have noticed these birds visiting the 'Neem' trees (*Melia azadirachta*) regularly and have found them feeding upon certain caterpillars which seem to affect the trees during the Monsoon. The Golden Oriole prefers tall trees and alights on top-most branches. The Indian Cork trees (*Mellingtonia*) attract this bird as do other tall trees. During the breeding season, its call is constantly heard and one may watch the males chasing the females pugnaciously in and out of trees. I have observed these birds chasing green Parakeets and being chased by them in a playful mood. During the nesting time, the birds appear shyer and are constantly on the move, perching for a while and again taking wing. The flight can be fairly fast and the turnings in the air attractive to watch. Once a pair establishes its breeding territory, it is seldom seen far from it. Large stretches of green trees and ample supply of water is where the bird is mostly resident. It, however, spreads out into open country, interspersed with trees, during the rains, and breeds where food and shelter are good. In the hot months, it restricts itself to shaded areas close to water. Gardens, 'wādis' and thickets are ideal refuges for this bird.

DISTRIBUTION. The whole of India, except the driest districts, and most parts of Saurashtra. Resident and local migrant. Breeding in Saurashtra where food and shelter conditions are favourable, being commoner in Southern and Eastern Saurashtra. The movement of the bird is much influenced by rain and temperature as also by availability of food.

NESTING. Season—May to September. Some birds breed before the rains but the majority of them just after the first heavy rains. They nest in thorny forests, mixed deciduous forests as in the Gir and large trees in gardens

and the countryside. During the breeding season, the males call frequently and are often seen chasing the females and displaying in the air, being very restless. The nest may be built in any kind of tree but usually, though not quite invariably, on an over-hanging branch between two horizontal slender ones. It is generally built at a height of eight to 25 feet, well above reach; it is made of grass and finished with cobwebs. In appearance, it is a real hammock. The eggs number two to three, and are white with scanty spots of black. This Oriole readily deserts its nest if often disturbed. Some nests are placed in thick patches of jungle where they are difficult to find. But the birds have a preference to build their nests on roadsides where, though in the open, they are not easily noticeable. Their preference to building close to roads seems to be a habit derived from experience, for there they appear to get more safety from their natural enemies, the Crows and Tree Pies. I have also seen them nesting in proximity to a King Crow's nest which defends its nesting area scrupulously. Both sexes take part in incubation and rearing the young.

FOOD. Insects, caterpillars and fruit. Their movements depend much upon the abundance of food. When caterpillars appear in the 'Neem' tree, the birds at once foregather to feed upon them and will leave the vicinity soon after. During Winter, the Silk Cotton trees (*Bombax malabarica*) and Ficus trees are visited regularly.

BLACK-HEADED ORIOLE

Gujerati Name—Kālā Māthānō Pilak

Oriolus xanthornus LINNAEUS

See Coloured Plate 32.

SIZE. About that of the Myna.

IDENTIFICATION. The male is distinguished from the male Golden Oriole by his deeper golden-yellow and black head. The wings also are black. Eyes, red; legs, blackish. The female has the head and upper-breast streaked black, is duller in colour and has a greenish mantle. The young, both male and female, resemble the adult female. The call differs considerably from that of the Golden Oriole though the *peoo* call may be heard occasionally. The common note emitted is a harsh one, viz., *krooik*, much resembling that of the Himalayan Black-throated Jay. It also has similar guttural calls. The song is pleasant to the ear. These birds prefer to perch on the top-most branches, and are, on the whole, rather shy. Their presence is noted by their peculiar and attractive calls. They are generally seen singly and rarely in pairs. The

body-pose is upright. This Oriole prefers wooded areas where there are plenty of trees and plantations.

NOTES. It is rare that one comes upon the Black-headed Oriole except during local migration. I have seen it at Mahuva (Gohilwad) in mid-Summer as well as in Winter. In the Gir, it is seen in Summer and Winter. It occurs in Winter as a local migrant in most parts of Saurashtra where there are extensive plantations and trees.

DISTRIBUTION. Well-wooded parts of India. Uncommon in Saurashtra and appears generally to be a local migrant with us, sometimes breeding in the Gir Forest.

NESTING. I saw a pair commencing to build in April, in the Gir Forest. The nest and eggs resemble those of the Golden Oriole.

FOOD. Insects and fruit.

DRONGO OR KING CROW

Gujerati Name—Kālō Koshi

Dicrurus macrocercus VIEILLOT

See Coloured Plate 25.

SIZE. About that of the Bulbul with a relatively longer tail.

IDENTIFICATION. A completely glossy black bird with a long forked tail. A very small white spot at the corner of the mouth is sometimes visible. The bill is slightly hooked and fairly strong. It has short legs. The body-pose, when perched, is nearly vertical. Sexes alike. The wings are short in comparison with the tail which enable it to climb into the sky almost vertically. The common call is a whistle like *chichivoo-chichiv* ending in a *chivoo-chivoo*, and a *chicheev* is also heard. Occasionally, a bird may be heard calling at night.

NOTES. This is one of the most courageous and active of our birds. In flight, it is very graceful, and aided by its long tail, it has a great control in the air. The flight is undulating. There is practically no angle at which it cannot fly; like an air acrobat it will loop the loop while attempting to catch flying insects; it will also make vertical drops with closed wings reaching close to the ground and then, by spreading them suddenly, rise up almost perpendicularly. In this way, it may be considered the real King of the Air. Its mastery in turning in the air and chasing swift and elusive insects is quite remarkable. I once observed a bird chasing a common Bee-eater which is one of the most

adept birds at turning, and yet the King Crow followed every turn that the Bee-eater made, finally compelling it to seek refuge in a tree. It is a common sight to witness a bird climbing up in the sky to catch an insect and then, after catching it, dropping straight down to its perch. During the breeding season, it does not hesitate to chase birds larger than itself, and birds such as Eagles are often attacked from above with its small but strong bill and legs. As it is one of our commonest birds, it is seen everywhere and its familiarity with cattle is well known. While sitting on the back of a goat, sheep or cattle, it watches out for insect life which the animal flushes while grazing, and picks them up on the wing or from the ground. In fact, it does considerable good by destroying insect pests that worry the livestock and attack the crops. The King Crow is a great mimic of animal and bird life, and it is not unusual to be fooled by its mimicry. It is interesting to listen to the various calls that it emits in early mornings and late evenings. I have heard strange jungle sounds such as the call of the wild cat and the shrill cries of birds and rodents when caught by predators. Besides the common call, it has a variety of whistles. Young birds of the year have the abdomen mixed with grey.

DISTRIBUTION. Throughout India including Kutch, Gujerat and Saurashtra. Resident.

NESTING. Season—May to August. The nest is usually placed on a horizontal branch, often between two slender branches. In shape, the nest is a fairly shallow cup, being made of grasses and cobwebs. It is a strange fact that the sides of the nest are better built than the bottom, so much so that it is always possible to see the eggs from under the nest. The eggs number three to five and are pale pinkish to salmon-pink, having dark reddish-brown spots at the larger end. The markings vary from small spots to larger ones, forming almost a ring at the larger end. However, on the average, they differ considerably in size. Both birds incubate, keeping a vigilant guard over the nest. Birds familiar with and close to human habitation allow very close approach even while sitting on eggs. On account of their courage in defending their nests against predators, other birds nest under their protection. I have noticed this fact especially with the Doves.

FOOD. Chiefly insects taken on the wing. The King Crow seems to be a very useful bird.

INDIAN GREY DRONGO

Gujerati Name—Rākhoḍi Koshi

Dicrurus leucophaeus longicaudatus JERDON**SIZE.** Same as the last species.

IDENTIFICATION. At a distance, this bird appears black and can be easily confused with the common King Crow. However, when seen in sunlight, it can be distinguished by the glossy, dark steel-blue colour of the upper-parts. The lores, an area in front of the eye, is black. The eyes, are red. The lower-parts are dark blackish-grey mixed with white. The juvenile birds have whiter abdomen. In general appearance, compared to the common Drongo, it is a slimmer bird with a longer and slimmer tail and not jet black in colour. In habits it is the same as the common Drongo, but it prefers well-wooded tracts and is migratory. Sexes alike.

NOTES. I have noted this bird in the Gir where it occurs frequently and it has also been found at Mitiala where it is a Winter visitor. One bird which I particularly noticed was singing beautifully and mimicking the songs of Thrushes and Blackbirds. I was quite taken up by this bird's song, for I had never heard such beautiful music from our local bird life. The birds are generally seen singly or in pairs and I have never come across them in flocks.

NESTING. Same as the last species.

DISTRIBUTION. Most parts of Northern India* and not uncommon in some parts of Saurashtra. The distribution of this bird in Saurashtra requires further investigation. I have noted the birds around the Gir, on the Girnar and in the Gir itself where it might be resident although it is believed to be a Winter migrant.

FOOD. Insects.

WHITE-BELLIED DRONGO

Gujerati Name—Dhōlā Pētnō Koshi

Dicrurus caerulescens caerulescens LINNAEUS**SIZE.** About that of the Bulbul with a longer tail.

IDENTIFICATION. Very much like the King Crow in shape but distinguishable from it by the upper-parts being greyish-blue, and the lower-breast to

* Recently recorded by me at Mandvi, in Kutch.

vent being white. The upper-breast is light to dark grey. Sexes alike. This Drongo is a bird frequenting forests and gardens with plenty of trees, and is occasionally found in scrub forest areas. It is mostly seen singly after the Monsoon and during the Winter months till about March. The birds are a little shyer than the common Drongo but will allow fairly close approach.

NOTES. The birds coming into Saurashtra are local migrants from other parts of India and may be encountered any time during the Winter months. They may remain in one locality for some time and yet, if conditions are not suitable, they will move into another area. They are fine songsters and good mimics and are, therefore, sometimes kept in cages for this reason. Unlike the common Drongo, they restrict themselves to forests and prefer extensive cover. They are also seen in thorny scrub jungle where there are large trees and plenty of shade.

DISTRIBUTION. Resident in well-wooded areas of India including Gujerat; locally migratory elsewhere. Uncommon though a regular cold weather visitor to Saurashtra; absent from Kutch.

FOOD. Insects; rarely small birds.

TREE PIE

Gujerati Name—Khakhédō

Crypsirina vagabunda LATHAM

See Coloured Plate 27.

SIZE. About that of the Myna with a long tail.

IDENTIFICATION. Recognised by its blackish-brown head, rufous to cinnamon-brown body mixed with white, and the long grey tail tipped with black; wings, black. The lateral tail-feathers give the tail a tapering appearance which is conspicuous in flight. The bill is short, stout and slightly curved. Eyes, brown to reddish-brown; legs, blackish-brown.

NOTES. The Tree Pie has a variety of calls and, owing to its habit of frequently calling, its presence is easily revealed in the field. The common call is a metallic *oolrip-oolrip* and a fast repeated *ka-ka-ka-ka*; this call indicates alarm. It also has a resonant *konk*, repeated at intervals. In addition to this, it utters other guttural and piercing calls. The flight is undulating with alternate flapping and gliding. The wings often make a sort of drumming sound. The Tree Pie is found in forests, gardens, hills and in the close vicinity of large towns, sometimes entering them where there are large trees. The birds are usually seen in pairs. Sexes alike.

DISTRIBUTION. Most parts of India and common throughout Saurashtra except in open treeless areas. Resident. Absent in Kutch according to Mr. Sálím Ali.

NESTING. Season—March to July. Odd birds breed earlier or later. The nest is made of twigs and placed in the fork of a tree or on a branch. Thorny as well as thornless trees are selected for the nests, but more often the former. At times, the nest is fairly conspicuous though out of reach. It appears rather roughly made and is not a very deep cup. The eggs number from two to three, and have two colour phases, one greenish with spots of greyish-brown and the other white with reddish-brown splashes or spots. The former is more commonly found. The birds generally nest in forested areas.

FOOD. Mostly insects and birds' eggs, also newly hatched young of small birds. The Tree Pie is regarded as a thief and is, therefore, a curse to all breeding birds, especially the smaller species. I have seen them watching Bulbuls and other birds building their nests, and when the eggs were laid they promptly ate them. Parent birds attacking the Tree Pie reveal the whereabouts of their nests to their enemy. A pair of Tree Pies, while in search of food, will systematically scour an area, day after day, destroying all the eggs and the young that they find. Amongst other food, they readily take lizards, insects and their cocoons, and frogs, and will enjoy the nectar of flowering trees, e.g., 'Pungara', *Butea monosperma*, etc. They also feed on fruit, being specially destructive to 'Papaya' plantations.

INDIAN HOUSE CROW

Gujerati Name—Kâgdô

Corvus splendens splendens VIEILLLOT

See Coloured Plate 27.

SIZE. Slightly larger than the Pigeon.

IDENTIFICATION. Mask of head, black. Remainder of head, neck and under-parts, ash-grey. Rest of body, black.

NOTES. This is one of our commonest birds and can be seen everywhere, either near habitation or in forested areas. The birds congregate in large flocks where there is plenty of food. In the early morning, they are to be seen flying to their feeding grounds, and then returning to their roosts at about dusk. However, there is no rule to their out-going and in-coming flights apart from their feeding forays, for I have noticed them moving from one place to another, and one may, at times, be surprised at the sudden appearance of large flocks in towns. The solidarity amongst the Crow tribe is well-known, and if one bird discovers

some food, it calls others to join it. Similarly, when in difficulty, they utter a peculiar call to attract other Crows in order to obtain help. This common call is a guttural *caw* but they also have other calls of significance. Crows may be heard calling at night. They are usually seen in flocks but one may often come upon single birds or pairs. On account of their habit of 'massing' together over a wounded animal, shikaries are able to locate the position of their lost game. Falconers who have lost their Falcons or Hawks are also guided by Crows flocking over the stray bird. In the same way, Crows attract attention by calling and by flocking, which may betray some Bird of Prey or large animal or an unusual sight. Sexes alike.

DISTRIBUTION. Throughout Saurashtra and the rest of India. Resident.

NESTING. Season—May to August. Most of the eggs are laid during the Monsoon. Nests are normally built on trees but strange sites like the tops of telegraph posts are not uncommon. All sorts of varied material is utilised in nest-building; twigs is the common material used, but I have noticed an entire nest made of thick wire pieces. This indicates the strength of the bird's bill in bending the wire. The nest is lined with rags and other soft material, but this is not always the case. At the time of building, Crows have an urge for taking new objects to their nests, and I once found a golf-ball in a nest, and in another, a horse-shoe. The Crow does not attempt to hide its nest; I have noticed old ones being rebuilt year after year. The eggs number four to six and the colour varies from light blue to greenish-blue, being heavily blotched or sparsely spotted with darker shades. Some, however, are almost unmarked. There is, in fact, a great variety in the marking of eggs, and one sees a considerable amount of difference between one clutch and another. It is in this Crow's nest that our Indian Koel invariably lays its eggs, thus reducing its reproduction. Young Crows are often reared with young Koels. The mating of the Crow is very rarely seen. I have observed this taking place on the ground and at the nest, and it is exactly the same as in other birds.

FOOD. Refuse of all kinds. It is omnivorous in its diet. Crows are great stealers of food, including young chicken and eggs. They even have the courage to attempt to drink milk from the jars off the heads of milkmaids and snatching bread from the hands of children. During the breeding season, they gather in flocks and destroy the eggs and chicks of birds.* Nevertheless, they are useful birds once the rains have set in, as they then feed upon the many injurious insects, especially grasshoppers, beetles and locusts which destroy the young crops. I have seen them hiding their food most cunningly for future use.

* See *B.N.H.S. Journal*, Vol. No. XLII, No. 1, p. 185: "Crows as Destroyers of Game."

INDIAN JUNGLE CROW

Gujerati Name—Girnāri Kāḡlō

Corvus macrorhynchus culminatus SYKES

See Coloured Plate 27.

SIZE. Larger than the House Crow.**IDENTIFICATION.** Recognised by the entire body and head being black; a purple and bluish sheen is seen on the feathers when in brilliant sunlight. The bill is strong and slightly curved. Eyes and legs, blackish. Sexes alike.**NOTES.** They are seen in towns, villages, gardens and forest areas, always preferring the vicinity of large leafy trees. Sometimes they move about in small groups, especially while feeding, but prefer to stay in pairs or singly; while feeding they often mix with the House Crow. The call is a harsh *quawwww*, a deeper and more resonant note than that of the House Crow. They also have other guttural notes. The birds are often heard giving out a drawn out *quaww* while flying with out-spread wings in a semi-gliding motion. This usually indicates presence of food, and is a call to summon others of their kind. In the Gir, the presence of lions is often indicated by a Crow, calling from the tree under which the animals are resting or have their "kill".**DISTRIBUTION.** Most parts of India and practically throughout Saurashtra, but rare or absent near Dhrangadhra in N. E. Saurashtra. Resident wherever found.**NESTING.** The breeding season commences in February and ends in about May or June, most of the nests being occupied from the end of February to the end of April. The nest is made up of sticks and lined with odd materials such as wool, hair and rags. It is usually placed fairly high up in a fork of a tree and is often well-concealed. The birds prefer to nest in thick trees of fairly large dimensions and yet I have seen them nesting in solitary trees of *Acacia arabica* of stunted size, in open country where the nest was fairly visible and close to water. The eggs number four to five and are of bluish-green colour, spotted or streaked with darker shades. They, however, vary in colour from light blue to greenish-grey, some clutches being almost uniform in colour. Although some people have noted the 'Koel's' eggs in this Crow's nest, I have failed to find them. This is probably because this species breeds earlier in the season than the House Crow.**FOOD.** Its food consists of refuse of all kind, small animals and carrion; it chiefly preys upon young birds and eggs of useful species. It is a very destructive bird.* I have seen it attacking small mammals, young Game Birds and lizards. It also feeds on coleoptera, locusts and other insect life and their larvae. It rarely becomes bold enough to snatch food from the hand.* See *B.N.H.S. Journal*, Vol. No. XLII, No. 1, p. 185: "Crows as Destroyers of Game."

SUPPLEMENT
SOME NOTES ON
THE BIRDS OF GUJERAT AND KUTCH



INDIAN SHAG

Gujerati Name—Kāḷō Juḷ Kāḡḍō

Phalacrocorax fuscicollis STEPHENS

SIZE. About that of a domestic Duck.

FIELD IDENTIFICATION AND NOTES. This Cormorant is slightly larger in size than the Little Cormorant and smaller than the Large Cormorant, and it is distinguished by the absence of white patches on the posterior of the flanks during the breeding season and by the presence of 12 feathers in the tail. It also differs in its habit of diving for food from the water's surface by rising out of the water more than the Large Cormorant. Wing measurements: Over 250 mm. and under 300 mm.

DISTRIBUTION. From India to Burma. In Gujerat, it has been recorded breeding in Kharaghora by Bulkley.

NESTING. These birds nest from July to September and also during the Winter months. They nest on trees, preferably on those standing in water, often in company with Herons. Three to five elongated pale chalky-blue eggs are laid.

BESRA SPARROW-HAWK

Gujerati Name—Bésrā

Accipiter virgatus TEMMINCK

SIZE. Slightly smaller than the Shikra.

FIELD IDENTIFICATION AND NOTES. The male has the upper-parts slate-grey, with the head, back and lesser wing-coverts almost blackish. The lower-parts are whitish with broad rufous bars, and the upper-breast and flanks are almost uniform rufescent. The eyes are yellow or orange-red and the legs are bright yellow. The female is slightly larger and more slate-brown on the upper-parts. Young birds are dark brown on the upper-parts with rufous edges to the feathers; their lower-parts are striped on the breast. The Besra closely resembles the Shikra but has thinner tarsus and comparatively longer

middle toe like that of the 'Basha' or Indian Sparrow-Hawk. However, it is distinguished from the 'Basha' by a broad mesial stripe on the chin and throat, and by the fact that the upper-parts are much darker, especially the crown; in size, it is much smaller; and the tail is comparatively shorter.

The Besra is rarely seen and difficult to identify in the field from the male Indian Sparrow-Hawk except by the broad mesial chin-stripe which cannot be seen in flight. This bird is used in falconry and its flight is faster than that of the Shikra. Falconers consider it hardier than the 'Basha'. There are two races of the Besra in India: the darker Northern *affinis* and the lighter Southern *besra*. In hand, the wing measurements of the male are from 145 to 175 mm., and those of the female from 197 to 210 mm.; the culmen measures 15 to 17 mm. in the male and 18 to 20 mm. in the female.

DISTRIBUTION. The Besra is found in the Himalayas, Burma, Ceylon and most of the well-wooded parts of India upto Travancore. I have no records of it in Saurashtra though it may occur there. However, it is found in Gujerat.

NESTING. The Northern race breeds from April to June and the Southern one from January to May. The nest is made of twigs. The bird, however, generally uses old nests of other birds. Three to five eggs are laid which resemble those of the English Sparrow-Hawk but are whiter and more boldly marked with reddish-brown and grey. The bird is known to be noisy during the breeding season and owing to this habit some Indian falconers call it 'Kookoo-Kiki.' It is also known as 'Dhoti', synonymous with the Indian Hobby.

FOOD. Insects, rodents, birds and small reptiles.

YELLOW BITTERN

Gujerati Name—Pīḷi Pān Bagli

Ixobrychus sinensis GMELIN

SIZE. About that of the Pond Heron.

FIELD IDENTIFICATION AND NOTES. The male is a buffy-yellow and brown bird, having a black crest. Under-wing, white; lower-parts, light buffy-yellow; eyes, orange-yellow; bill, pinkish or yellowish-brown; legs, pinkish; facial skin, greenish. The female normally has a buff line on the centre of the throat and fore-neck. In habits, the bird is much like the Chestnut Bittern. It is seen mostly during the Monsoon.

DISTRIBUTION. Patchy in India, extending to South China and the Celebes. Recorded by Butler at Deesa in Gujerat.

BLACK BITTERN

Gujerati Name—Kāji Pān Bagli

Dupetor flavicollis GMELIN

SIZE. That of the Pond Heron.

FIELD IDENTIFICATION AND NOTES. The male has dark bluish-grey or slate upper-parts while the lower-parts are slate to brownish-black. The neck is deep chestnut, mixed with black and buffy-white. The eyes are red or golden-brown. The bill is dusky-red and tipped with yellow. The legs are brown. The female is browner and her breast is streaked with white. In habits, this bird is much like the last species but more nocturnal.

DISTRIBUTION. Almost throughout India and extending to the Celebes. In Gujerat, it has been recorded by Littledale at Baroda and by Doig at Ahmedabad where it appears to be a local Monsoon migrant.

BLACK STORK

Gujerati Name—Kājō Dhonk

Ciconia nigra LINNAEUS

SIZE. Same as the White Stork.

FIELD IDENTIFICATION AND NOTES. This Stork has black upper-parts, having a green and purple gloss to the feathers. The lower-parts from the lower-breast are white. The bill, the facial skin and the legs are red. In flight, the wings appear all-black. Sexes alike.

DISTRIBUTION. From North India to the Deccan as a Winter visitor. Breeding in Eastern Europe and Central Asia. Mr. H. Acharya records seeing it as a regular visitor to Ahmedabad (Gujerat), and Lester has recorded it in Kutch.

ADJUTANT STORK

Gujerati Name—Jamādār Dhonk

Leptoptilos dubius GMELIN

SIZE. Larger than the Vulture.

FIELD IDENTIFICATION AND NOTES. The upper-parts are light and dark grey, but blackish in some birds. The lower-parts are white. The naked ugly head is flesh-red and is covered with black hairs. The bird has a thick wedge-shaped yellowish bill. It has a long hanging reddish pouch on the fore-neck, much like an elongated balloon, which is much more evident during the breeding season. Sometimes a red patch is seen at the base of the hind-neck. The legs are brownish and the eyes are whitish. But for its short neck, the Adjutant Stork seems a larger bird than the Sarus. In flight, the neck is drawn in unlike the Painted Stork.

DISTRIBUTION. Northern India to Burma. In Gujerat it has been recorded by Barnes in the rainy season, by Mr. H. Acharya in Ahmedabad and by Butler, in Deesa and Kutch. It appears to be a Monsoon visitor to Western India. Found in two species, viz., large and small; the latter (*javanicus*) has no pouch, is resident in Southern and Eastern India, and has occurred in Northern India.

WHITE-FRONTED GOOSE

Gujerati Name—Shvétabhāl Gāj-Hansa

Anser albifrons SCOPOLI

SIZE. Smaller than the domestic Goose.

FIELD IDENTIFICATION AND NOTES. A comparatively much browner and smaller bird than the Grey Lag Goose and distinguished from it by a white forehead and broad black bars forming a sort of patch on the lower-breast. The legs are orange. Sexes alike.

Lester shot three birds in February, 1892, in Kutch, and H.H. the Maharao Vijayrajji of Kutch was believed to have shot this species.

DISTRIBUTION. A rare Winter migrant to Northern India. Abroad, it is found from Europe to Western Siberia.

ALPHERAKY'S SWAN

Gujerati Name—Dēva Hamsa

Cygnus columbianus jankowskii ALPHERAKY

SIZE. Larger than the Vulture.

FIELD IDENTIFICATION AND NOTES. A long-necked Goose-like white bird with blackish legs. The black bill has a dull yellowish-orange base which extends to the eyes. The bill is comparatively broader than in other Swans. Sexes alike.

The first Indian record of this race of Swans was a bird collected alive by H.H. the Maharao Madansinhji of Kutch out of two birds seen at Hamirsar Tank (Kutch) on 9th April, 1947 (See article by Mr. Sàlim Ali, Journal of the Bombay Natural History Society, Vol. 47, No. 1, page 167).

DISTRIBUTION. Breeding in Eastern Siberia, and wintering in China. An extremely rare straggler to India. There are only three records of the typical *bewickii* in India.



LARGE WHISTLING TEAL

Gujerati Name—Moṭi Sisoti Batak

Dendrocygna bicolor VIEILLOT

SIZE. About that of the domestic Duck.

FIELD IDENTIFICATION AND NOTES. Distinguished from the Lesser Whistling Teal by its larger size and white upper tail-coverts. When closely seen, the black streaks on the fore-neck are also diagnostic. Sexes alike.

In habits, the bird is much like the Lesser Whistling Teal. It is, however, not found in such large flocks as the smaller species.

DISTRIBUTION. Found resident in the well-watered districts of Northern and Central India. It does not seem to have occurred in Gujerat, but is included in Palin's list of Kutch Birds. It has a wide distribution outside India, being found in South America, Africa, Burma and Ceylon.

NESTING. Same as the Lesser Whistling Teal.

BRONZE-CAPPED OR FALCATED TEAL

Gujerati Name—Choṭili Lūhār Mūrghābi

Anas falcata GEORGI

SIZE. About that of the Wigeon.

FIELD IDENTIFICATION AND NOTES. The male is recognized by his dark but brilliant bronze-green and purple head, black collar, and grey and white crescentric design of the feathers of the breast (reminiscent of the breast of male Gadwall). The speculum on the secondaries of the wing is dark glossy green and bordered by a white line. The female is much more rufous-brown and has black speculum, bill, and legs. H.H. the Maharao Vijayrajji of Kutch shot a bird in February, 1932, in Kutch (See Journal of the Bombay Natural History Society, Vol. 35, page 899).

DISTRIBUTION. Breeding in Eastern Asia and migrating southwards in Winter to India, China and Japan. Very rare in North India during Winter.

CLUCKING OR BAIKAL TEAL

Gujerati Name—Baikāl Mūrghābi

Anas formosa GEORGI

SIZE. That of the Teal.

FIELD IDENTIFICATION AND NOTES. The male is recognized by the crown, chin, throat, upper-neck, and vertical stripe from the eye to the throat being black. A broad band running from behind the eye to the nape is metallic green, from which two black stripes run downwards to the nape and neck; the face is buff. A white stripe over the eye from the base of the upper-mandible to the hind-crown is present. The wing-speculum is bronze-green, followed by a black and white bar. Also, there is a white vertical bar on the sides of the breast. The female differs in being browner and streaked with blackish-brown, on the head and neck, and in having scale-like feathers on the upper-parts. The lower-parts, including the chin and throat, are white or buffy-white. The fore-neck is streaked with brown. The speculum is duller. The bill and legs are slate-grey or black in both sexes.

The only record of this species occurring in Gujerat is a drake shot by E. L. Barton near Ahmedabad on 16th December, 1898.

DISTRIBUTION. Breeding from Siberia to Northern China and migrating southwards to India, China and Japan. A very rare straggler to India.

BLACK PARTRIDGE OR FRANCOLIN

Gujerati Name—Kāḷō Tétar

Francolinus francolinus LINNAEUS

SIZE. About that of a half-grown village Hen.

FIELD IDENTIFICATION AND NOTES. The male differs from the Painted Partridge to which he closely resembles by his black lower-parts, chestnut collar and white cheek-patch. Moreover, there are some white spots on the flanks and the sides of the breast. The female is much paler, lacking the conspicuous white cheek-patch, the chestnut collar and the black and white markings of the male. She, too, closely resembles the Painted Partridge but has a chestnut patch on the hind-neck. Also, the Black Partridge is slightly larger than the Painted Partridge. There are no sharp spurs on the legs in either sexes, but the male has a short blunt one. The call is a shrill *kik-kik-kirri*, given out in a higher key than in the case of the Painted Partridge.

The Black Partridge is found in grassland, scrub jungle and forest. In the hills of Northern India, it is found at various altitudes upto almost 8,000 ft. It affords excellent sport and is a tasty table bird.

DISTRIBUTION. Found from Asia Minor to Northern India, south to Kutch, and Deesa in Gujerat and from Gwalior and the Central Provinces to Bengal and down to Chilka in Orissa. Resident.

NESTING. It makes a scrape on the ground and lays five to eight eggs of an olive-brown or chocolate-brown colour. In the plains, the season is mostly from June to September.

RED SPUR FOWL

Gujerati Name—Chokhārā

Galloperdix spadicea GMELIN

SIZE. About that of a half-grown village Hen.

FIELD IDENTIFICATION AND NOTES. The cock is a reddish brick-coloured bird with pale grey edges to the feathers. The rump and upper tail-coverts are chestnut. The tail is composed of chestnut and black feathers. The red legs have two sharp short spurs on each leg. The Indian name 'Chokhārā' is quite appropriate because 'chau' means 'four' and the spur is known as 'khār'. Hence 'Chokhārā' means 'Four-spurred'. The hen differs from the cock in being dark reddish-brown with blackish markings and

in having no spurs on her legs. The bird is easily recognized by its cackling calls, viz., *ta-ghank, ta-ghank tuk-tuk-tuk-taghank* and *chuckerr-chuckerr*.

Unlike the Grey Jungle Fowl, this species is found in thinner forests although both species may be found together. Red Spur Fowl are usually seen in pairs or in small groups. Their flight is fast and low, but they prefer to escape by running or by hiding. Once hidden, they are difficult to flush. When they rise, they emit a *chuck-chuck-chuck*. They are good table birds and much sought after by sportsmen. They had been introduced in the Victoria Park at Bhavnagar, Saurashtra, with success.

DISTRIBUTION. South of Mt. Abu and throughout Southern and Central India. A pale race *caurina*, which has the upper-parts mixed with chestnut and grey, is found in the Arvalli Hills and at Mt. Abu.

NESTING. The main breeding season is during the hot months. The bird makes a scrape on the ground for a nest which is well-hidden. Three to six eggs of a rich buff colour are laid. Both parents incubate and take care of the young. When the chicks are menaced, the parents feign injury by ruffling their feathers and spreading out both wings, running in serpentine manner and stopping every now and then.

GREY JUNGLE FOWL

Gujerati Name—Jungli Mūrghō

Gallus sonnerati TEMMINCK

SIZE. That of the village Hen.

FIELD IDENTIFICATION AND NOTES. The most distinctive characteristic of this bird is its call note from which it can always be recognized if once heard. The cock crows like a *kuck-kaya-kaya-kuck*, ending with a short *keon-kun* which is not always heard. The hen's call note is *kahucka-hucka-hucka* which is an invitation to the male. The cock is recognized by his yellow and black neck-hackles which appear as a spotted design. The lower-parts are striated black and silver-grey. The hen has almost a scale-like design of the same colour on the breast.

The Grey Jungle Fowl prefers bamboo forest and close cover. They are shy birds, retreating into thicker cover when approached. During the early morning or late evening, the cock may be heard crowing or feeding in the valleys or jungle paths. It is an excellent game bird which provides the sportsman with much entertainment and is a good table bird. It provides good sport when driven over like Pheasants. When flushed, it sometimes emits a *ka-ka-ka-ka*. I have also seen it take immediate shelter of bamboo or

overhanging branches, and then it is very difficult to see the bird from underneath the tree where it is hidden. In the breeding season, it may be seen in pairs and the cock bird may be heard crowing almost throughout the day. The cock generally crows in the morning well before sunrise to about an hour or two after it and in the evening before and after sunset. He may crow while on the ground or when perched, though usually from the ground. I remember seeing two cocks fighting for more than 10 minutes in the Bardipada bamboo forest of the Dangs. I have often attracted the cock by imitating the sound of a bird scratching amongst leaves. The cock can be attracted with greater certainty by imitating the call of the hen, using a bamboo leaf for the purpose. Birds feeding amongst leaves can be detected from the ruffling sound they make by scattering the leaves but they become very wily and take shelter at once when they suspect danger. The alarm call is a cackling sound. The flight consists of intermittent glides and is not very fast.

DISTRIBUTION. Found in fairly thick forested areas of Southern India as far north as Mt. Abu and South Rajasthan where it is fairly plentiful. It is found in the Dangs, also. The range almost coincides with teak forest.

NESTING. The breeding season is mainly from February to June. Five to seven buffy-white eggs are laid in a nest made amongst leaves in bamboo clumps or similar low cover. The hen alone incubates. The young are striped with dark brown and buff.

INDIAN BANDED BAY CUCKOO

Gujerati Name—Patṭāvāli Lāl Kōyal

Cuculus sonnerati LATHAM

SIZE. About that of the Myna.

FIELD IDENTIFICATION AND NOTES. This bird is recognized by its rufous-brown and black bars on the upper-parts and tail; the latter is tipped with white. The lower-parts are greyish-white and barred thinly with brown. The bill is horny-green with a blackish tip, and the legs are greenish-grey or brown. Sexes alike.

This Cuckoo seems to shun the dry areas and keeps to the forest and well-wooded countryside.

DISTRIBUTION. Widely spread over throughout India. Found in forested areas of Gujerat.

NESTING. It is known to have a prolonged breeding season, usually breeding from April to August. It is parasitic, laying its eggs in other birds' nests.

INDIAN PLAINTIVE CUCKOO

Gujerati Name—Nāni Rākhoḍi Kōyal

Cuculus passerinus VAHL

SIZE. About that of the Bulbul with a relatively longer tail.

FIELD IDENTIFICATION AND NOTES. The upper-parts of this bird are ash-grey with a bronze sheen while the lower-parts are light grey. A white patch on the wing shoulder, coupled with a small white patch on the wing-quills, readily identifies the bird in flight. The tail is blackish, tipped with white and barred on the inner-webs of the outermost feathers. The eyes are red, the bill is brown and the legs are yellow. Immature birds are chestnut on the upper-parts, having black bars on the scapulars, back and wing-coverts. The lower plumage is whitish, having wavy black bars.

DISTRIBUTION. The wooded areas of India and Gujerat. Butler records it at Mt. Abu.

NESTING. This bird is generally resident wherever found. It is parasitic on the smaller Warblers. The eggs resemble those of its foster parents.

SMALL GREEN-BILLED MALKOHA

Gujerati Name—Nānō Lilō Mālkohā or Lilō Sirkeer

Taccocua viridirostris JERDON

SIZE. About that of the Myna with relatively long tail.

FIELD IDENTIFICATION AND NOTES. A Cuckoo-like bird which has ash-grey upper-parts with an olive-green gloss, a bright green bill with a blackish tip, and blood-red or crimson eyes with a cobalt-blue orbital skin. The greyish-white lower-parts are mixed with reddish-brown. Sexes alike.

In habits, the bird is much like the Sirkeer-Cuckoo but inhabits greener vegetation. It is generally found in forests and enters scrub country. It feeds on fruit and insects.

DISTRIBUTION. Ceylon and Southern India upto the Dangs and Baroda. Resident.

NESTING. The nest is much like that of a Dove, but thicker at the base and lined with a few green leaves. It is made of twigs and placed on low thorny bushes. When disturbed off the nest, the bird becomes excited, thus betraying its location. Two to three white roundish eggs are laid. The season is a prolonged one and the eggs have been collected throughout the year.

INDIAN BLUE-BREASTED BANDED RAIL

Gujerati Name—Piroji Pān Lauvā

Rallus striatus LINNAEUS

SIZE. Between the Quail and the Partridge.

FIELD IDENTIFICATION AND NOTES. This bird is recognized by its bluish-grey breast, dark-brown upper plumage having wavy white bars, and chestnut head and sides of the neck. The abdomen and flanks have black and white bars. The bill is partly red and the legs are greenish-olive. The female is slightly duller and whitish on the lower-parts.

Like all Rails, it keeps to reeds and rushes in marshes and is seen walking at the water's edge or close to reeds, characteristically jerking its tail.

DISTRIBUTION. Found throughout India in suitable localities. Recorded at Devisar in Kutch in 1892 by Lester. Resident and locally migratory.

BRONZE-WINGED JAÇANA

Gujerati Name—Kālō Ja] Manjār

Metopidius indicus LATHAM

SIZE. About that of the Partridge.

FIELD IDENTIFICATION AND NOTES. The Bronze-winged Jaçana is a black Wader except for the back and wing-coverts which are of a glistening bronze-green colour, and for the presence of a white stripe behind the eyes extending upto the nape. The red and yellow bill and the green legs also help in identifying the bird immediately. As in the Pheasant-tailed Jaçana, the toes are thin and long. Sexes alike.

This bird is found on jheels, rivers and lakes where there are aquatic plants. It prefers large stretches of water abundant with floating plants, such as the 'Singoda' (*Trapa*).

DISTRIBUTION. Most parts of India except the driest areas. Resident in Gujerat. Uncommon in Kutch according to Mr. Sālim Ali. I have often seen it on the shallow lakes of Rajasthan.

NESTING. The bird breeds during the rains. Three to seven eggs are deposited on floating aquatic plants. They are stone-yellow or reddish in colour and covered with a jumble like pattern of black lines. Betham and Littledale have recorded the bird breeding in Baroda.

WOODCOCK

Gujerati Name—Vana Chor

Scolopax rusticola LINNAEUS

SIZE. About that of the Partridge.

FIELD IDENTIFICATION AND NOTES. A large Snipe-like bird with a comparatively shorter bill. The under-parts are profusely and finely barred. Two transverse black bars on the hind-crown and nape are indicative. The upper tail-coverts are reddish-brown and the general colouration of the bird is buffy. It is much heavier than the Snipe, weighing upto 12 ounces. Sexes alike.

The Woodcock is a very rare bird with us, found normally in forest country. In its breeding ground, it is known to carry its young away when suspicious of danger. Its colouration is one of the best examples of camouflage in Nature.

DISTRIBUTION. Widely distributed in Europe and Asia. Breeding in the Himalayas and wandering southwards to the Nilgiris. H.H. the Maharao Madansinhji of Kutch shot a specimen at Chakar (Kutch) in November, 1942, and Sir Peter Clutterbuck saw a bird at Hamirsar tank (Kutch) in January, 1945. The Yuveraj of Jasdan collected a bird at Mt. Abu on the 2nd July, 1949.

EMERALD OR BRONZE-WINGED DOVE

Gujerati Name—Nilam Holi

Chalcophaps indica LINNAEUS

SIZE. Slightly larger than the Myna.

FIELD IDENTIFICATION AND NOTES. This Dove is easily recognized by its emerald-green wing-coverts, white forehead, and grey crown and nape. Bill, orange-red; rest of lower-parts from the face, rich reddish-brown or of a dark brick colour; tail, blackish-brown. In flight, the chestnut or coppery undersides of the wing, and the greyish-white bars on the back and rump help to identify it. The female is duller and has less white on the head while young birds hardly have any and are much more duller.

The Emerald Dove is normally seen on forest paths or roads, while feeding on the ground. When flushed, it flies rapidly in a straight line across or along

the road. The call is a series of booming or humming sounds ending with a *hi-hi-hi-hi*.

DISTRIBUTION. It is widespread in the better wooded areas of India. Found in South Gujerat upto the Tapti River. Resident.

NESTING. Two pale creamy-buff eggs are laid in a well-concealed typical Dove nest.

LARGE INDIAN PAROQUET

Gujerati Name—Rājpiplā-nō Popat

Psittacula eupatria LINNAEUS

SIZE. About that of the Pigeon but slender and with a long pointed tail.

FIELD IDENTIFICATION AND NOTES. Recognized by its large size, its green colour, and a maroon-red patch on the lesser wing-coverts. It has a rosy-pink collar, and a black moustachial stripe continuing towards the nape. The tail has long greenish-blue feathers. The lower-parts are greenish-yellow and vary in colour slightly. The bill is red. The female is paler and the rosy and black collar of the male is absent. The call is a sharp and distinct one and, once recognized, easily identifies the bird.

These large Parakeets prefer forested areas and well-wooded tracts. They are seen in pairs or in small flocks. They are noisy at the places where they roost and feed. They are popular cage birds as they can be taught to whistle and talk. On rare occasions, a bluish coloured bird is encountered. This freak is highly prized by bird fanciers. Young birds are plain dark leaf-green with brown eyes. In adults the iris is pale yellowish-white. Adults assume a greyish tinge on their plumage.

DISTRIBUTION. Throughout the better wooded areas of India and South Gujerat.

NESTING. The birds nest during the Winter and Spring months, excavating holes in large trees or using those of Woodpeckers and Barbets. Three to four white eggs are laid.

JUNGLE OWLET

Gujerati Name—Vana Chibri

Glaucidium radiatum TICKELL

SIZE. About that of the Myna.

FIELD IDENTIFICATION AND NOTES. This bird resembles the Spotted Owlet but is finely barred with pale rufous-white. The lower-parts are white or greyish-brown and barred with blackish-brown. The tail is dark brown with numerous (about nine) narrow bars of white colour. The eyes are yellow or brown. In the field, the upper-parts appear dark khaki-brown while the flanks appear greyish and barred black. Some birds I noticed had a pale collar on the hind-neck and were slightly brighter than others. The wings in flight appear chestnut-brown. The wing measurements are between 127 mm. and 134 mm., and the tail measures 66 mm. to 74 mm. Sexes alike.

These birds are found in the jungle and are seldom seen during the day, coming out of their haunts to feed at dusk. They have varied calls, such as a ringing *krooo-krooo*, often ending in series of *kroo-kucks*, much like the call of the Green Barbet. At a distance, one particular call sounds like a sharp whistle of a steam engine. I have often heard them calling after sunrise, at which time they may be seen perched on branches. In thick forests, they do not always seek cover of holes and hollows of trees during the day.

DISTRIBUTION. Most parts of well-wooded India. In Gujerat, the race *radiatum* occurs from Mt. Abu to the Dangs.

NESTING. The season seems to be from February to May. The bird lays in hollows and holes in trees. Two to four white eggs are laid.

MALABAR TROGON

Gujerati Name—Lājaṇa

Harpactes fasciatus PENNANT

See Coloured Plate 33.

SIZE. That of the Myna but with a longer tail.

FIELD IDENTIFICATION AND NOTES. The male has blackish-brown head and upper-breast, followed by a white circular band on the breast. The lower-parts are bright crimson-pink. The upper-parts are yellowish-brown, being brighter on the rump. The wing-coverts have black and white vermiculations which, in the field, appear as a grey patch. It has a long, stiff looking, square-cut, chestnut tail which is tipped black. The lateral tail-feathers are

white, and the orbital skin and gape are blue. The female is orange-brown with ash-brown head and breast.

This species of which the male is a beautiful bird is found in not a very thick forest. The birds I saw in the Dangs were in fairly thin dry deciduous forested areas and also in tall evergreen bamboo clumps. They are shy birds on the whole, shunning close observation, and yet when perched at a fair distance, they permit a fairly good view of them. Malabar Trogons may be seen in pairs or alone. They have a habit of turning their backs when approached. They sometimes emit a mewing call which is said to betray their presence. They feed actively on flying insects. With powerful binoculars, I saw a bird crushing and swallowing fruit of *Ficus asperrina*. When flying away, it can easily be mistaken for a Tree Pie owing to its yellowish rump. I have noticed that it has a habit of twisting the tail sideways while flying from one branch to another or while feeding. In the early morning or evening, it may be seen perched fairly low or flying across open glades, often close to a road.

DISTRIBUTION. The Western Ghats to Travancore. The race *legerli* is found in South Gujarat. In the Dangs, it is not uncommon.

NESTING. The season varies from February to May. The birds are known to nest in hollows or hollow stumps of trees in fairly thick forest, laying two to four glossy pale buff or ivory-white eggs. Mr. Sálím Ali found a nest which resembled that of a Dove. Both sexes incubate.

BROWN-HEADED STORK-BILLED KINGFISHER

Gujerati Name—Dhonkebhāñch Kalkaliyō

Pelargopsis capensis LINNAEUS

See Coloured Plate 33.

SIZE. About that of the Pigeon.

FIELD IDENTIFICATION AND NOTES. A very large Kingfisher with a long Stork-like red bill. It has a greyish-brown head and a yellow-ochre collar. The upper-parts are green and blue. The tail is blue, the lower-parts are rufous and the legs are red. Young birds are barred on the breast, forming a sort of band. Sexes alike. This Kingfisher is found close to water in forested areas. The call is a harsh and loud one. The bird feeds on a variety of wild life, such as fish, reptiles, insects, nestlings of birds, etc.

DISTRIBUTION. Most of the well-wooded and watered areas of India and Ceylon. It is found in South Gujarat. Resident.

NESTING. It nests by excavating tunnels in the banks of streams and rivers, and rarely in holes of trees. The tunnel is $3\frac{1}{2}$ " to 4" wide at the entrance but widens at the egg-chamber. Three to four whitish eggs are laid. The breeding season seems to be a long one: from February to August.

BLACK-CAPPED KINGFISHER

Gujerati Name—Vanakhāḍinō Kalkaliyō

Halcyon pileata BODDAERT

See Coloured Plate 33.

SIZE. Between the Myna and the Pigeon.

FIELD IDENTIFICATION AND NOTES. This Kingfisher is easily recognized by its black crown and upper-head. It has a conspicuous white collar and the dark-blue colour of the upper-parts is bright. The wing-coverts are black and the flight feathers are white with black tips. The rump and tail are azure-blue. The lower-parts are white to buffy-white with the flanks and axillaries pale rufous. The bill and legs are red. The breasts of young birds are mixed with black. Sexes alike.

This is a very handsome Kingfisher found near creeks and at the riverside close to forests.

DISTRIBUTION. It has a very wide range from South-Western India to China and down to the Celebes. It is found in the Surat-Dangs where it is probably resident.

NESTING. Season—April to July. The birds nest in holes in banks or on the face of a hill, and rarely in holes in trees.

GREEN BARBET

Gujerati Name—Lilō Tūktūkiyō

Megalaima zeylanica GMELIN

SIZE. About that of the Myna.

FIELD IDENTIFICATION AND NOTES. A large Coppersmith-like bird of uniform green colour with brownish head and breast, the latter streaked with white. The call is a prolonged *koorrr kuturoo kuturoo* which identifies the bird at once. It is not easily seen but is often heard. The Green Barbet is found in forested areas, gardens and cultivation where there are plenty of green leaved

trees. It seems to prefer perching close to the tops of trees, and in their midst, I found it rather a pugnacious bird readily chasing others of its kind; and yet I heard it calling not far from another bird which, too, was calling.

DISTRIBUTION. Southern India upto Mt. Abu. Resident. The smaller race *viridis* is recognised by its dull coloured orbital skin not reaching upto the gape.

NESTING. The bird nests in holes in trees and two to three white eggs are laid. The main nesting season appears to be from March to June.

SOUTHERN RUFOUS WOODPECKER

Gujerati Name—Keedighar Lakkad Khod

Micropternus brachyurus jerdoni MALHERBE

See Coloured Plate 33.

SIZE. About that of the Myna.

FIELD IDENTIFICATION AND NOTES. A uniform rufous-brown bird with a greyish-brown crown. The upper-parts are barred with dark brown while the lower-parts are plain rufous. The bill is horny-brown and the eyes are reddish-brown. The male has a crimson crescent-shaped patch under the eyes.

In habits, the bird is much like other Woodpeckers. I have heard it drumming on a dry thick bamboo. The common call is a sharp *keek*, uttered three to four times.

DISTRIBUTION. India from a line south of Orissa in the East and south of Bombay on the West. I saw the bird in the Surat-Dangs where it appeared less common than other Woodpeckers of its size.

NESTING. The season seems to be from February to May. The nest is invariably made in an ants' nest, usually on a branch of a tree; it is a round football-like structure of fairly hard substance. These Woodpeckers usually bore a hole on the side in the middle of the ants' nest and make a nest-chamber a few inches deep. A live nest full of ants and their larvae is mostly used. The bird lays two to three white eggs which are soon stained and appear light brown. They are longish ovals and without a gloss, and the shell is translucent.

SCALY-BELLIED GREEN WOODPECKER

Gujerati Name—Lilō Lakkaḍ Khod

Picus myrmecophoneus STRESEMANN

SIZE. About that of the Myna.

FIELD IDENTIFICATION AND NOTES. The male is recognized by his crimson-red crest and crown. A white supercilium with a black line above it is present. The cheeks are streaked with black. The green upper-parts have a bright yellow rump. The dark brown wing-quills are barred with white. The lower-parts have scale-like markings. The greenish-brown tail is faintly barred except on the outer tail-feathers. The female differs in having a black crest and crown.

This bird is found in hilly forested areas. It has a habit of often coming down to the ground to feed.

DISTRIBUTION. Widespread throughout India down to Ceylon. Found in Mount Abu and adjacent hills in Gujerat.

NESTING. The nest-hole is about 2 inches in diameter, and three to five glossy-white eggs are laid. The main breeding season seems to be between March and May.

GREAT BLACK WOODPECKER

Gujerati Name—Moṭō Kālō Lakkaḍ Khod

Dryocopus javensis hodgsoni JERDON

See Coloured Plate 33.

SIZE. About that of a House Crow.

FIELD IDENTIFICATION AND NOTES. The adult male has a scarlet-red crown and a small patch behind the lower-mandible of the bill. The rest of the upper-parts and the wings are black. The white lower-breast and belly, and the white rump, give it a pied appearance in flight which immediately identifies the bird. There are two pointed long black feathers in the tail which are not always noticeable. The eyes are yellowish, and the bill is lead-grey. The female differs in having black forehead and fore-crown, and a scarlet crest on the hind-crown. The red cheek-patch seen in the male is absent.

The bird is one of our most magnificent Woodpeckers which is immediately recognized by its handsome pied plumage and large size. It is generally found in fairly thick forests where large trees abound. It may be seen in pairs and heard calling to each other. I have heard it emit a single sharp call,

reminiscent of the Black-winged Stilt, though it is known to utter a resounding laugh. I found it a little shy but when feeding, it allowed me close approach. The tapping on trees is loud while the drumming is reminiscent of the sound of machine-gun fire coming from a distance. I have also heard a harsh note emitted when one bird was feeding another.

DISTRIBUTION. Throughout the Western Ghats upto the Tapti Valley and the Dangs in South Gujerat. It is also found in the Satpura Range. Resident.

NESTING. The nest-hole is large and about 6" in diameter. The breeding season is generally between March to July. Four to five white eggs are laid.

HEART-SPOTTED WOODPECKER

Gujerati Name—Shyāmadil Lakkad Khod

Hemicircus canente canente LESSON

See Coloured Plate 33.

SIZE. About that of the Bulbul.

FIELD IDENTIFICATION AND NOTES. The male has black upper-head while the forehead is finely spotted with white; the rump is creamy-white. The rest of the upper-parts, including the crest, are black except for the straw-white wing-coverts which have black heart-shaped markings. The lower-parts are olive-brown. The female has creamy-white crown and her wing-coverts are more straw-white. The bill is black.

This bird is found in thin forests. It generally keeps to higher branches and is often seen in pairs.

DISTRIBUTION. The Western coast of India upto the Dangs and Songadh in South Gujerat. Resident.

NESTING. The season varies from January to March. The nest-hole is generally placed high upon a branch or trunk of a tree in the forest.

MALHERBE'S GOLDEN-BACKED WOODPECKER

Gujerati Name—Késaripeeth Sonéri Lakkad Khod

Chrysocolaptes lucidus chersonesus KLOSS

See Coloured Plate 33.

SIZE. Slightly larger than the Myna.

FIELD IDENTIFICATION AND NOTES. Distinguished from the Black-backed Woodpecker by its bright red rump. This species has a golden-olive

or pale golden colour on the back. The female has white spots on the black crown. The male has a crimson crown.

DISTRIBUTION. Found in South Gujerat and upto Southern India. Resident.

NESTING. Season—December to May. The bird bores a hole in trunks of trees which is about 3" in diameter. The same nest-holes are often used year after year provided the birds are undisturbed.

BLACK-BACKED WOODPECKER

Gujerati Name—Kālōpeeth Lakkad Khod

Chrysocolaptes festivus BODDAERT

See Coloured Plate 33.

SIZE. Slightly larger than the Myna.

FIELD IDENTIFICATION AND NOTES. This Woodpecker is separated from the Golden-backed Woodpecker to which it closely resembles by a fairly conspicuous white patch on the back and a noticeable white throat. The cheeks have fine black stripes. The female has an orange or yellow crown. The male has a crimson one.

This bird is found in forested areas and its call is rather a harsh chatter which is uttered frequently.

DISTRIBUTION. Practically throughout the well-wooded areas of India and Gujerat including the Dangs. Resident wherever found.

RED-WHISKERED BULBUL

Gujerati Name—Sipāhi Būlbūl

Pycnonotus jocosus LINNAEUS

SIZE. Same as the Red-vented Bulbul.

FIELD IDENTIFICATION AND NOTES. Recognized by its pointed black crest and crimson-red patches behind the eyes. The lower-parts are white with a black band on the side of the breast and a red vent. Sexes alike. However, the black markings of the male are bolder.

These birds have the habit of perching on tops of trees and bushes, and are frequently heard calling. They feed upon insects and fruit.

DISTRIBUTION. Throughout India except the dry North-West. The pale race *abuensis* is found in Mt. Abu and adjacent hills. And *fuscicaudata*, which is darker and has the breast-band unbroken, is found from south of the Tapti River to almost throughout Southern India.

NESTING. Similar to the Red-vented Bulbul.

WHITE-BROWED BULBUL

Gujerati Name—Saféd-Néna Būlhāl

Pycnonotus luteolus LESSON

SIZE. That of the Bulbul.

FIELD IDENTIFICATION AND NOTES. This bird has pale greenish-brown upper-parts. It has no crest but has a conspicuous supercilium. The eyes are red and the lower-parts are dull white, having a greenish tinge. Sexes alike.

Commonly found in scrub jungle and gardens, preferably near water.

DISTRIBUTION. Resident in South Gujerat upto Baroda and the Peninsular India.

NESTING. The nest is much like that of the Red-vented Bulbul but not so neat and well made. Two to three eggs are laid. They are slightly paler than those of the Red-vented Bulbul.

JERDON'S CHLOROPSIS

Gujerati Name—Jerdon-nō Harévō

Chloropsis jerdoni BLYTH

SIZE. About that of the Bulbul.

FIELD IDENTIFICATION AND NOTES. Much like the Gold-fronted Chloropsis but easily distinguished from it by the absence of the orange forehead and by a brighter purple-blue patch on the malar region. The chin and throat are blacker. The female has a pale greyish-blue throat.

Commonly found in thin deciduous forests and gardens. It is also found in the thick forest of South Gujerat. It is a good mimic like the next species.

DISTRIBUTION. Most parts of India and Gujerat. Resident. Not found in Kutch.

NESTING. The bird makes a shallow cup-shaped nest which is well-concealed amongst leaves; it is placed fairly high up on the tree. Two to three eggs are generally laid. They are buffy or creamy in colour, and marked with black, purple, and reddish-brown spots and scrolls. Usually, the birds nest in the hot months and the Monsoon season.

GOLD-FRONTED CHLOROPSIS

Gujerati Name—Harévō

Chloropsis aurifrons TEMMINCK

See Coloured Plate 33.

SIZE. About that of the Bulbul.

FIELD IDENTIFICATION AND NOTES. Adult male: Whole of body and tail, bright leaf-green; forehead, orange-yellow; malar region, purple with broad black border; blue patch on lesser wing-coverts; bill, black and slightly curved. The female is duller. The Green Bulbul, as it is known, is found in the thickly forested areas. Its song is melodious and the bird is a good mimic like the last species. It prefers shaded areas amidst large trees and green vegetation. It may be seen hanging upside down or climbing vertical branches to feed upon nectar or reach folded leaves on slender branches searching for spiders and insects. It is active but difficult to spot when against a background of green vegetation with which it matches perfectly.

DISTRIBUTION. Found in the well-wooded areas of India and South Gujarat. Resident in Gujarat but absent from Kutch.

NESTING. Season—April to September. The nest is built fairly high up in a tree and suspended between two twigs usually amidst leaves. The eggs have a buffy or creamy-white ground colour and are speckled, blotched or scrolled with purple and brown or reddish-brown, more so on the broad end. They are slightly pointed at one end and have a fine glossy texture.

BLACK-BACKED PIED SHRIKE

Gujerati Name—Kālōpēṭh Kabarō Laṭorō

Hemipus picatus SYKES

SIZE. About that of the Bulbul.

FIELD IDENTIFICATION AND NOTES. The upper-parts are glossy black and the back and rump have white edges to the feathers, forming a band on the

rump. The conspicuous white feathers on the sides of the head and neck appear like a scarf. The lower-parts are dull buffy-brown. This is a forest species. It has a peculiar habit of catching its prey which is much like that of a Flycatcher.

DISTRIBUTION. The Western Ghats and South Gujerat: the Dangs and Surat (Sálim Ali). Resident.

NESTING. The birds breed during the hot months, making a shallow saucer-like nest of grass, cobwebs, moss and lichen. Although the nest is placed on an open branch of a tree, it is fairly difficult to find and generally placed beyond reach. Two to three greenish-white eggs are laid. They are boldly marked with inky-black.

ORANGE MINIVET

Gujerati Name—Késariyō Rājālāl

Pericrocotus flammeus flammeus FORSTER

See Coloured Plate 33.

SIZE. About that of the Bulbul.

FIELD IDENTIFICATION AND NOTES. Adult male: Head and upper-parts, including back, wings and central tail-feathers, black; rest of lower plumage, flaming orange with orange patches on wings, rump and outer tail-feathers. The female has yellow instead of orange and greyish-brown instead of black with yellow forehead and face. The young resemble the female.

The Orange Minivet is found in forested country, keeping to shady areas. It is found in pairs during the breeding season but gathers in small groups in Winter. While feeding, it may come fairly close to where one is sitting, and it is not an uncommon sight to see a group of birds feeding together or following each other in single file. The male is a very beautiful bird.

DISTRIBUTION. Ceylon, the Nilgiris, the Western Ghats upto the Dangs and Songadh in South Gujerat.

NESTING. The nest is a small shallow cup plastered with lichen and placed fairly high upon a slender branch or twig of a tree. The eggs are pale sea-green and splashed with reddish-brown or purple. The main breeding season seems to be just before and during the Monsoon.

INDIAN SHORT-BILLED MINIVET

Gujerati Name—Nānichāp̄hvālō Rājālāl

Pericrocotus ethologus BANGS and PHILLIPS

SIZE. Slightly smaller than that of the Bulbul.

FIELD IDENTIFICATION AND NOTES. A smaller replica of the Scarlet Minivet. Male: Upper-parts, black; lower-parts, bright scarlet. A broad scarlet band running across the wings is present; the rump and upper tail-coverts are scarlet. The central tail-feathers are black; the outer-webs of the adjoining tail-feathers are red. In the female, the scarlet colour is replaced by a greenish-yellow, and the black by a light grey while the rump and upper tail-coverts are yellow to orange-yellow.

These birds are found in well-wooded tracts as well as in open country with leafy trees. They move in flocks in Winter, calling frequently to each other. They often sally forth in Flycatcher fashion to catch insects on the wing.

DISTRIBUTION. Breeding in the Himalayas and spreading over Northern India during Winter. Found in Mt. Abu and Northern Gujerat.

INDIAN BROWN FLYCATCHER

Gujerati Name—Bhārati Rātō Mākhimār

Muscicapa latirostris RAFFLES

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. An ash-brown Flycatcher with whitish lower-parts; throat, breast and flanks, streaked and mottled with ash-brown. A pale ring round the eyes is present; the tail is dark brown with pale edges. Sexes alike. Littledale records this species at Saran (Dungarpur State).

DISTRIBUTION. This bird has a wide range, being found from Eastern Asia to Japan and throughout India in the hills. Presumably resident in the Dangs.

NESTING. As mentioned in the 'Fauna of British India: Birds,' Vol. II, page 250, the season is from May to June. The nest is a large cup made of moss or lichen, and lined with roots, feathers and fibrous material. The eggs are stone-coloured and freckled with red.

RUFOUS-TAILED FLYCATCHER

Gujerati Name—Lālpūṇehh Mākhimār

Muscicapa ruficauda SWAINSON

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. Upper-parts, olive brown; wing-quills, brown, edged with reddish olive-yellow; tail, chestnut; vent and abdomen, whitish; a white ring round the eyes. Sexes alike. This Flycatcher is found in forest and is a shy bird, keeping to the higher branches of trees. This species and the last may occur in Saurashtra.

DISTRIBUTION. Breeding in the Himalayas and migrating south to most parts of India in Winter. Barnes and Butler have recorded it at Mt. Abu.

VERDITER FLYCATCHER

Gujerati Name—Piroji Mākhimār

Muscicapa thalassina SWAINSON

SIZE. About that of the Sparrow.

FIELD IDENTIFICATION AND NOTES. A bright greenish-blue Flycatcher with black lores. The female is duller; otherwise the sexes are alike. This bird is frequently seen singly, perched on telegraph wires, uttering its sharp *tick-tick* and moving its tail up and down. It is not shy. It is mostly seen in hilly areas.

DISTRIBUTION. In Gujerat it appears to be a Winter migrant but not commonly seen. It breeds in the Himalayas and migrates south of its range to most parts of India during Winter.

WHITE-SPOTTED FANTAIL FLYCATCHER

Gujerati Name—Pahāḍi Nāchapa

Rhipidura pectoralis HAY

SIZE. About that of the Sparrow.

FIELD IDENTIFICATION AND NOTES. Similar to the White-browed Fantail Flycatcher but differs from it by its less conspicuous or narrow white

eye-brows and heavily spotted breast. Sexes alike. This race inhabits better wooded country and is found in more hilly areas.

DISTRIBUTION. The Peninsular India and Gujerat. Resident in Baroda, Mt. Abu, Idar and South Gujerat.

NESTING. Same as the White-browed Flycatcher.

DESERT WARBLER

Gujerati Name—Rāṇa Fūdki

Sylvia nana HEMPRICH and EHRENBERG

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. Mr. Sálím Ali writes in 'The Birds of Kutch', p. 32-33: "A smaller edition of the Grey-backed Warbler in many ways; upper plumage, sandy-brown; lower, pale buffy-white; rump, upper tail-coverts and tail, largely rufous".

DISTRIBUTION. A Winter visitor to the coast of Kutch. Breeding in East Persia and the Middle East.

BRISTLED GRASS-WARBLER

Gujerati Name—Kāntāvāli Khaḍ-Fūdki

Chaetornis striatus JERDON

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. A small Warbler with a pale supercilium. Upper-parts, fulvous-brown and broadly streaked with black; lower-parts, yellowish-brown with white on chin, throat and abdomen. The barred tail is greyish-brown, tipped fulvous-white and having a subterminal black patch. Eyes, brown to deep brown; bill, black in the breeding season and horny-brown at other times. A fairly common bird found in grasslands and lakesides. It is fairly active while feeding which it does either on the ground or close to it.

DISTRIBUTION. Most parts of India and Gujerat. Resident.

NESTING. Betham found it nesting in Baroda in August. A fragile domed nest of grass is made on the ground amidst long grass. It is well-concealed. Three to five white eggs are laid which are speckled with red.

SHAMA

Gujerati Name—Shyāmā

Copsychus macrourus malabaricus SCOPOLI

SIZE. That of the Bulbul but with a longer tail.

FIELD IDENTIFICATION AND NOTES. Adult male: The upper-parts and the entire breast are black with a bluish gloss; the belly and vent are deep chestnut; the rump is white; the central tail-feathers are black and the white outer tail-feathers are clearly seen when the bird flies from the ground. The female has the black replaced by the dark brown, and her breast is dark grey. The legs are fleshy in both sexes.

This bird is found in thick and well-wooded forest. I noticed that in the Dang Forest of Gujerat it preferred large bamboo patches. It is a famed songster and, therefore, highly prized as a cage bird. The common song notes are liquid and melodious. Moreover, it is an excellent mimic. It is fairly shy and does not always allow close approach.

DISTRIBUTION. Evergreen forests of India. Resident wherever found.

NESTING. Season—April to August. It nests in thick clumps of bamboo, making a cup-nest the outer appearance of which is rather untidy. Some nests may be placed on the ground or in a hole. The eggs are similar to those of the Magpie-Robin but duller.

WHITE-THROATED GROUND THRUSH

Gujerati Name—Malāgir Kastūrō

Turdus citrinus cyanotus JARDINE and SELBY

SIZE. That of the Myna.

FIELD IDENTIFICATION AND NOTES. A Thrush with white throat and cheeks, and having two brownish bars on the latter, one of which covers the eyes. The head and the lower-parts, including the rump and tail, are dark bluish-grey. The patches on the grey wings are white. The female has brownish-olive upper-parts.

This is a shy bird, keeping to well-shaded forest areas. In the breeding season, it sings melodiously and is a splendid mimic. A bird singing amidst thick foliage is not easily located.

DISTRIBUTION. The Dangs, Khandesh and throughout the Western Ghats upto Travancore.

NESTING. Breeds during the hot months and the Monsoon. The nest is made of moss, grass and roots mixed with mud or clay. It is placed not very high up in a bush or a tree. The eggs number four to five and are light blue or whitish, splashed and spotted with light reddish-brown.

BLUE-HEADED ROCK THRUSH

Gujerati Name—Bhūrā Māthānō Kastūrō

Monticola gularis cinclorhyncha VIGORS

SIZE. About that of the Bulbul.

FIELD IDENTIFICATION AND NOTES. Adult male: Recognized by his dark blue-brown throat, upper-breast, wings and tail. A white patch on the wings is conspicuous, especially in flight. The rump and lower-parts are bright chestnut. The female differs in being brown, the lower-parts being barred with white. The bird is fairly shy in habits, visiting forest areas.

DISTRIBUTION. Breeding in the Himalayas and migrating southwards throughout India during Winter. It is found in Mount Abu, Matheran and Mahableswar. Uncommon in Gujerat.

STRICKLAND'S CHAT

Gujerati Name—Strickland-nō Piddō

Oenanthe picata opistholeuca STRICKLAND

SIZE. Same as that of the Pied Chat: between the Sparrow and the Bulbul.

FIELD IDENTIFICATION AND NOTES. The male is recognized easily by his black plumage, white rump, and white upper and under tail-coverts. The tail is white with a terminal black band. The female and juvenile birds have the black replaced by the brown, and have a white abdomen.

This Chat is found in dry arid desert country. Although I have not seen these birds in Saurashtra, it is just possible that they may occur in the desert areas of the peninsula.

DISTRIBUTION. A Winter visitor to North-West India. Uncommon in North Gujerat and Kutch.

BROWN ROCK CHAT

Gujerati Name—Kālō Patharāl Piddō

Cercomela fusca BLYTH

SIZE. Between the Sparrow and the Bulbul.

FIELD IDENTIFICATION AND NOTES. In colour, much like the female Indian Brown-backed Robin without the chestnut vent, and distinguished from it by its habit of bobbing the head up and down and not keeping the tail erected. In shape, it is much like a small replica of the Blue Rock Thrush. Sexes alike.

These birds are found in rocky country, preferring the precincts of ruined forts and temples. They are confiding birds, permitting close approach. The song is melodious with a characteristic call of *chuck-chuck*. It is strange that there is no record of it in Saurashtra. It is just possible that a few birds visit the Northern Saurashtra coast.

DISTRIBUTION. Resident in the Punjab, Rajasthan and Central India. Fairly common in Kutch and North Gujarat. And common at Mt. Abu.

NESTING. The bird breeds during the hot months and the Monsoon. It nests in rocky cavities and holes in walls. The eggs are pale blue with reddish spots forming a circle at the broad end.

MALABAR WHISTLING THRUSH

Gujerati Name—Kastūrō or Indrarāj

Myiophoneus horsfieldi VIGORS

SIZE. Between the Myna and the Pigeon.

FIELD IDENTIFICATION AND NOTES. The general appearance of the bird is black with a purplish sheen. The forehead and lesser wing-coverts are bright cobalt-blue. In the breeding season, which coincides with the Monsoon, the birds sing in a crescendo of loud human-like whistles; hence the popular name of 'Whistling Schoolboy'. The birds are heard singing especially during heavy rains. They also emit some harsh calls and high pitched ones like the sound emitted by unoiled wheels. Sexes alike.

This Thrush prefers well-wooded forest areas and valleys close to and along rivers and streams covered with vegetation. It often takes shelter in caves and rocks. In the early morning it visits forest paths and may be seen feeding on worms, snails and other insect life.

DISTRIBUTION. Mt. Abu, Himatnagar, the Dangs, throughout the Western Ghats upto Travancore, and across Central India to Orissa. Resident.

NESTING. The bird generally breeds during the rains, making a nest of moss, rootlets and mud. It is placed on rocky ledges, often close to water-falls, amidst roots at the base of trees, inside houses and in caves. The eggs number three to four and are generally greyish in colour and speckled with reddish-brown.

FOREST WAGTAIL

Gujerati Name—Vana Ghōḍō

Motacilla indica GMELIN

SIZE. That of the Sparrow but with a longer tail.

FIELD IDENTIFICATION AND NOTES. A brown and white Wagtail recognized by its olive-brown upper-parts, and white lower-parts which have two black bands on the breast, the lower one not meeting at the centre. A white supercilium is clearly visible. In flight, three white bars across the black wings are conspicuous. The bill and legs are blackish.

This Wagtail is entirely a forest bird and has a peculiar trait of wagging its tail sideways and not vertically as in other Wagtails.

DISTRIBUTION. Breeding in Eastern Siberia, Northern China, Burma and Assam. In Winter, the bird spreads over most parts of India except the North-West. In Gujarat, it has been recorded in the Dangs.

ASHY SWALLOW-SHRIKE

Gujerati Name—Rākhoḍi Abābil-Laṭorō

Artamus fuscus VIEILLOT

SIZE. Slightly larger than the Bulbul.

FIELD IDENTIFICATION AND NOTES. The upper-parts are slate-grey. The rump and lower-parts are dull white. The tail is short and tipped with white. The wing-tips extend slightly beyond the tail. It has a short thick bluish bill. When perched, legs appear short. The flight is a combination of rapid wing-beats and glides and it frequently alights during its feeding forays. It

generally feeds on large insects, such as dragon-flies and lepidoptera. Birds may be seen singly or in small groups. The call is a sharp *chick-chick*.

DISTRIBUTION. Most parts of India and extending to Ceylon and West China. In Gujarat it has been found upto Godhra.

NESTING. The bird breeds during the hot months from March to July. The nest is an untidy cup made of grass and roots or such other material and is generally placed high upon a tree preferably a Palm Tree. The eggs number two to three and are white with a greenish tinge and heavily spotted with brown on the broad end.

SPOTTED GREY CREEPER

Gujerati Name—Rākhoḍi Thāḍ-Chaḍ

Salpornis spilonotus FRANKLIN

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. Recognized by its black and white spotted and barred upper-parts. It has a conspicuous white supercilium and a black eye-streak. The throat is white. The upper-parts are fulvous or cinnamon, barred with black. The bill is a long decurved one. The tail-feathers are stiff, much like those of the Woodpecker. In habits, the bird resembles the Nuthatch. Sexes alike. It appears to be very rare in the plains of Gujarat.

DISTRIBUTION. 'Fauna of British India: Birds,' Vol. I, page 440, gives the distribution as "East and south of a line from Gurgaon, Sambar, Ajmer and Mt. Abu and south to the Godavery valley. And Ball obtained it from Sambalpur and Chhota Nagpur and a specimen has been obtained from Bihar". It is found in Dhulia in Khandesh. Presumably resident.

CHESTNUT-BELLIED NUTHATCH

Gujerati Name—Kathāipét Zāḍ-Chaḍ

Sitta europaea LINNAEUS

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. A small bird found clinging to trunks and branches of trees, and recognized by its slate-blue upper-parts and deep chestnut lower-parts.

The Nuthatch is a shy bird and disappears behind a branch or trunk when approached, moving sideways much like a squirrel. Also, it taps on trees like Woodpeckers while feeding. Its food consists of insects, nuts and seeds. The bird climbs up the tree in a sort of jerky movement and in spiral fashion, keeping one leg in front. It often descends to the base of the tree and then works upwards again.

DISTRIBUTION. Found in most parts of India. Presumably resident in the better wooded areas of Gujerat. Absent in Kutch.

NESTING. Breeds generally between February and June in holes and cavities in trees. The nest is often lined with mud and the eggs, which number two to six, are whitish and spotted with reddish colour.

VELVET-FRONTED NUTHATCH

Gujerati Name—Makhmali Zād-Chad

Sitta frontalis SWAINSON

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. Recognized by its orange bill, black forehead and lores, and purplish-blue upper-parts. The lower-parts are pale lavender. The male has a black stripe above the eyes extending to the nape. In habits, similar to the last species.

DISTRIBUTION. It has a fairly wide distribution in India: from the Himalayas to the Nilgiris and the Eastern Ghats. Also found in Burma and Ceylon. I saw the bird in the Dang Forest, South Gujerat. It may occur in the Gir Forest, Saurashtra, but has not been recorded there so far.

NESTING. Season—February to June. The nest is made in a hole and lined with soft material including feathers. It may be placed low or high up. If the hole selected for nesting has a large entrance, it is plastered with mud and the finished entrance of the nest-hole is then about $1\frac{1}{2}$ " in diameter. Four to five white eggs, marked with reddish-brown or purple colour, are laid. The male bird betrays the nest-site by getting agitated and calling frequently.

WHITE-WINGED BLACK TIT

Gujerati Name—Kābari Rāmachackli

Parus nuchalis JERDON

SIZE. That of a Sparrow.

FIELD IDENTIFICATION AND NOTES. A typical Tit with pied plumage. Recognized in flight by a white band on the wings and white outer tail-feathers.

It is seen in scrub jungle, ' Babul ' thickets and thin forest. The common call notes are *si-weesi-weesi-wee* and *which-whichee*.

DISTRIBUTION. Resident wherever found in Kutch, North Gujerat and Rajasthan. Patchy in Kutch, being resident in the Bhuj district.

NESTING. Breeds generally in the Monsoon. The bird nests in holes and hollows of trees, lining the nest with fibrous material and hair.



YELLOW-CHEEKED TIT

Gujerati Name—Piñi Choñili Rāmachackli

Parus xanthogenys VIGORS

SIZE. That of a Sparrow.

FIELD IDENTIFICATION AND NOTES. Recognized by its prominent black crest, yellow cheeks and sides of breast, and a yellow line from eyes to nape. Back, greenish; breast, having a black line running down the centre. Sexes alike.

The Yellow-checked Tit is seen in forested hilly country, flying either in pairs or in groups in a restless manner. The bird calls frequently while on the move.

DISTRIBUTION. There are three races recognized in India. The Central Indian or Peninsular race is found in Gujerat and the Deccan. Absent in Kutch.

NESTING. The birds nest close to habitation and in forested areas. They nest in holes in trees or in cavities in walls or in roofs of buildings. Four to six eggs are laid; they are white and spotted with reddish-brown, and resemble those of the Grey Tit.

TICKELL'S OR YELLOW-BILLED FLOWERPECKER

Gujerati Name—Pīlichāṇchvāḷī Phūl Sūṅhaṇī

Dicaeum erythrorhynchos erythrorhynchos LATHAM

SIZE. Much smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. A very inconspicuous bird of darkish-green colour. The crown has dark centres to the feathers; the wings and tail are brown, and the lower-parts are pale buffy-white. The yellow or horny-brown coloured bill is slightly curved and pointed, and the legs are purplish.

This bird is found wherever the parasitic plant *Loranthus* is plentiful and on whose fruit it feeds. It thus spreads the seeds of this plant wherever it goes. It is a bird of forest as well as of open country.

DISTRIBUTION. Most parts of India including Gujerat, and extending upto Ceylon. Resident.

NESTING. The nest is egg or purse shaped, and usually well-concealed in thick foliage of trees, generally mango trees and placed not very high up. It appears whitish and is made of fine cotton-down, grass and fibre. Three white or greyish-white eggs are laid. The season is from February to June.

PURPLE-RUMPED SUNBIRD

Gujerati Name—Pachraṅgi Phūl Chakli

Nectarinia zeylonica LINNAEUS

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. The adult male has a metallic green and coppery-purple coloured crown. The upper-parts are mixed with crimson and green, and the rump and upper tail-coverts are purple-blue. The tail is black. A crimson and black line across the breast is visible. The vent is bright yellow. The female has ash-brown upper-parts, and her lower-parts are duller than those of the male. In habits, the bird is similar to other Sunbirds. However, this species does not change its colouration during Winter.

DISTRIBUTION. Central and Southern India and the southernmost parts of Gujerat. Presumably resident wherever found.

NESTING. Similar to that of the Purple Sunbird.

VIGOR'S YELLOW-BACKED SUNBIRD

Gujerati Name—Phūlrāj

Aethopyga siparaja vigorsi SYKES

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. The adult male has metallic green crown with a coppery shade. The yellow rump is not always conspicuous in the field. The greenish tail has two long feathers. The breast and the sides of the head and neck are brilliant scarlet like a shining ruby. The lower-parts are greenish-white. The female differs in having olive-green upper-parts and pale greenish-yellow lower-parts. The brown wings and tail are edged with yellowish-green.

This bird is found in forested areas, generally of the greener type.

DISTRIBUTION. The Western coast of India upto the Tapti Valley in Gujerat.

NESTING. The nest is similar to that of the Purple Sunbird but more pear-shaped. The eggs are either whitish and splashed with brown or reddish.

BLACK-THROATED WEAVER BIRD

Gujerati Name—Kālāgaḷāni Sūghari

Ploceus benghalensis LINNAEUS

SIZE. That of the Sparrow.

FIELD IDENTIFICATION AND NOTES. In breeding plumage, the male has bright golden-yellow crown and forehead, with black streaks across the eyes which extend upto the nape; the rest of the head is brown. The black breast and lower-parts along with the fulvous streaks on the flanks are diagnostic of the species. The upper-parts are brown, becoming darker on the wings. The female does not have the bright yellow crown or the dark black breast, but has a few yellow patches on the face. This bird prefers the vicinity of well-watered areas such as swamps and wet grasslands, and it usually avoids forests and dry areas.

DISTRIBUTION. Practically the whole of India upto Bombay and Gujerat. Betham found it breeding in Baroda and Barnes in Deesa.

NESTING. In 'Nidification of Birds of the British Empire', Vol. III, page 7, Stuart Baker says: "The nests are like those of the Common Bayas, but have no neck and very seldom tubes of more than an inch or two in length. Some nests have no tubes at all but rarely one sees a tube as much as six inches to two feet long." At Baroda, Betham obtained many eggs in August. The number of eggs laid are generally two to four and, rarely, five. In colour and shape they are similar to those of the Common Baya.

STREAKED WEAVER BIRD

Gujerati Name—*Liṇṭivāli Sūghari*

Ploceus manyar HORSFIELD

SIZE. That of the Sparrow.

FIELD IDENTIFICATION AND NOTES. The adult male in breeding plumage has the entire crown golden-yellow with blackish sides to the head. The upper-parts are blackish-brown, having fulvous edges. The lower-parts are fulvous and with broad streaks on the upper-breast. The bill is blackish, having a bluish-purple base. The female has a black crown, a dark moustachial streak and a pale yellow supercilium; the bill is horny-brown. In Winter plumage, the male resembles the female. This is the case with the young, too, but they are more reddish and less streaked on the breast, sometimes completely unstreaked. The bird prefers the waterside but does not vary much in habits from other Weaver Birds.

DISTRIBUTION. Throughout India, including Northern Gujerat, upto Ceylon; found in three races.

NESTING. In 'Nidification of Birds of the British Empire', Vol. III, page 8, Stuart Baker says: "Col. Butler found them at Milana near Deesa, breeding during August and September, where he says 'As a rule they are fastened to reeds and bushes growing in the water. They also often build in long grass overhanging ditches or small streams and I have occasionally found a small colony building in low thorny bushes and trees (mimosa, etc.), overhanging the water'. There is one very remarkable thing about this species, and that is a particular habit they have of cementing yellow flowers (generally mimosa) to the nest with cow dung. As a matter of fact the nest is not like that of *P. philippinus* as it has no neck, the upper part of the nest being rounded . . ."

RED MUNIA

Gujerati Name—Sūrakh or Lāl Mūniā

Estrilda amandava LINNAEUS

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. In breeding plumage, the male is dark red and spotted with white. The wings and tail are blackish. The bright red bill is conspicuous. The eyes are red and the legs are fleshy-brown. The female is brown with red upper tail-coverts mixed with white; the breast is greyish and the under tail-coverts are orange. In non-breeding season, the male resembles the female but has darker breast.

This handsome little bird affects forested areas, grassland and swamps, and is found generally close to water. It is seen in flocks and is not so shy as the Green Munia, often permitting close approach. When disturbed, it flies away, emitting a short note, viz., *chic-chic*. A group may be seen perched on grass or reeds, or settled on the ground in typical Munia fashion. Many birds are trapped to supply the demand of bird fanciers.

DISTRIBUTION. This Munia has a wide range over most of India, extending to Viet Nam and Java. It is found in most parts of Gujarat. Resident and local migrant.

NESTING. It breeds irregularly almost throughout the year, and makes a globular nest which is neater than those of other Munias. The normal clutch is from five to eight eggs which are white and oval.

GREEN MUNIA

Gujerati Name—Lili Mūniā

Estrilda formosa LATHAM

SIZE. Smaller than the Sparrow.

FIELD IDENTIFICATION AND NOTES. This pretty little bird is recognized by its dull green upper-parts and barred greenish-brown flanks. The lower-parts are white mixed with yellow and olive-yellow, assuming a brighter colour under the tail. The tail is black, the bill is red and the legs are fleshy-brown. The female is slightly duller. Sexes alike.

This bird is found in forests, thick grass and green cultivation, and wanders out in flocks during Winter. In general habits, it is shyer than the Common Munia.

DISTRIBUTION. Central India, Mt. Abu, Baroda and parts of Gujerat.

NESTING. The nest is globular like that of the Common Munia, and a number of nests may be found not far from each other. Five white eggs form the normal clutch.

GREY-HEADED MYNA

Gujerati Name—Pavāi Ménā

Sturnus malabarica GMELIN

SIZE. Smaller than the Common Myna.

FIELD IDENTIFICATION AND NOTES. This bird is recognized by its pure grey head and upper-parts. The lower-parts, including the under tail-coverts, are bright ferrugineous. The wings are black. The bill has a blue base and is greenish-yellow towards the tip which is yellowish-brown. The eyes are white. Sexes alike.

In habits, the bird resembles the Brahminy Myna but seems to keep more to the trees, usually alighting on those that are in flower and fruit. Small flocks may be seen in a thin forest and adjoining areas. The bird utters an incessant chattering, reminiscent of the Rosy Pastor.

DISTRIBUTION. The whole of India except the dry North-West. It is found in Mt. Abu and the wooded areas of Gujerat.

RACKET-TAILED DRONGO

Gujerati Name—Bhimrāj

Dicrurus paradiseus LINNAEUS

SIZE. About that of the Myna, with the outer tail-feathers 15" long.

FIELD IDENTIFICATION AND NOTES. The whole body is glossy black with a tuft of feathers on the forehead forming a sort of crest. Tail, black with two long thin feathers having broad ends; eyes, red; legs, black. Sexes alike.

The 'Bhimraj', as it is known in India, is one of the most powerful songsters among birds of our country. It is found in fairly thick forest, preferring well-shaded areas. It utters a very harsh call and also emits a variety of sharp whistles, making a sort of jingling sound. Also, it is an excellent

mimic. In the early morning, it starts singing well before sunrise. In flight it is graceful and strong like the common Drongo but much more impressive. It is rather shy though, sometimes, it allows fairly close approach.

DISTRIBUTION. Resident in the forested areas of India including South Gujerat.

NESTING. A typical Drongo nest, placed fairly high up in a fork of a branch. Two to four eggs are laid which are like large editions of those of the common Drongo. The birds breed during the hot months and the Monsoon. The courtship is rather interesting. The male makes a series of short steep swoops in front of the female which is perched close by.

RAVEN

Gujerati Name—Mahākāg

Corvus corax LINNAEUS

SIZE. Slightly smaller than the Pariah Kite.

FIELD IDENTIFICATION AND NOTES. Much larger than the Jungle Crow and recognized by his call, viz., *prūk, prūk*. It also utters harsh ringing calls. Sexes alike.

Mr. Sálím Ali saw Ravens in Kutch in October, 1943, and in March, 1944, but no specimen was collected. He suspects that the species seen was either the Punjab Raven or the Brown-necked Raven. I have seen Ravens in Bikaner and Jodhpur in June.

DISTRIBUTION. Resident in Sind (Pakistan) and the Middle East, and a vagrant in Kutch and South Rajasthan.

APPENDICES

I to V



APPENDIX No. I
EXTRACTS FROM BOMBAY GAZETEER—GUJARAT STATES

KATHIAWAR

CHAPTER I

DESCRIPTION

Kathiawar, as peninsular Gujarat is now called, lies on the west coast of India between 20°40' and 23°25' north latitude and 69°5' and 72°20' east longitude. The peninsula has an area of about 23,500 square miles.

INTRODUCTION

Kathiawar is a square peninsula standing boldly out into the Arabian sea between the smaller projection of Cutch and the straight line of the Gujarat coast. Its physical features suggest that it may once have been an island or a group of islands of volcanic origin. Half way along its northern border stretches a flat desert called the Ran, which in the rainy season becomes a shallow lake and in the dry season is bare of vegetation and studded with deposits of salt. Between Kathiawar and the Gujarat mainland a belt of salt land, with occasional marshes and pools, shows that at one time a channel joined the Ran with the gulf of Cambay, and that the whole northern margin of Kathiawar, from the gulf of Cutch to the gulf of Cambay, was once washed by the sea. The silt of the old eastern branch of the Indus, of the Luni, the Banas, the Sarasvati, the Rupen, and the Sabarmati, has gradually filled the shallow sea bed into which it fell, and has joined north-east Kathiawar with the mainland. Except this alluvial tract, the surface of Kathiawar is everywhere undulating or broken into hills. The highest eminences lie in an arc across the south of the peninsula, the loftiest summits from west to east being the Bardas which reach 2000 feet, the Osham hill near Dhoraji, the Girnar at Junagadh 3666 feet above the sea, summits of the Gir from 1500 to 2100 feet, and Shatrunjaya 1977 feet. North of this arc of hills is a rough tract, lying from south-west to north-east, the highest summits in which do not rise more than 700 or 800 feet above the sea. These hills fall away towards the north, the last conspicuous eminence being an isolated hill at Chotila 1173 feet high. The highest table land in the peninsula is in the centre, from which rivers run towards every side. The surface rocks are limestone in the south and sandstone in the north, both of good quality for building. The higher hills such as the Girnar are granite; the lower hills, trap and basalt. Curious straight dykes of basalt, from fifty to a hundred feet high and many miles long, are common in the centre and south-east of the province. In the older parts of Kathiawar the rock is near the surface and water is sweet and abundant.

BOUNDARIES. Page 3

The province is bounded on the south and south-west by the Arabian sea, on the north-west by the gulf of Cutch, and on the east by the gulf of Cambay. From the apex of these two gulfs, the Rans of Cutch and Cambay, waste tracts half salt morass, half sandy desert, stretch inland towards each other and complete the isolation of Kathiawar, except one narrow neck which connects it on the north-east with the mainland of Gujarat.

SUB-DIVISIONS. JHALAVAD. Page 4

The Nalkantha, is the country on the banks of the Nal an extensive lake of slightly brackish water at the head of the Ran of Cambay, and the Bhal the low-lying land bordering the Cambay Ran.

ASPECT. Page 7

Lying midway between the dry deserts of Sindh and the moist wooded Konkan, the province of Kathiawar partakes of the nature of both. At the same time it illustrates the transition between them by modifications of aspect ranging from the barrenness of the one to the richness of the other. Its shores, differing from the rocky coast line to the north and south of Bombay, resemble the coasts round the head of the Arabian sea, and inland it shows every variety of scenery, from the arid sandy tracts of Okhamandal in the west and Jhalavad in the east covered with cactus and desert bushes, to the forests of the Gir, where perennial streams flow through romantic glades ; from the desolate waste of the Ran to the south-western seaboard where throughout the year shady groves and green fields delight the eye ; from the salt-charged plains of the east and west, desolate and waterless in the hot season, to the rich seaboard tracts where water-wheels creak the livelong day and thriving villages nestle among gardens and brakes of sugarcane ; and from the ever sterile hills of Halar and Jhalavad to the lofty splintered peaks of the Girnar towering over the wooded ranges of Sorath.

THE COAST. Page 8

The coast may be divided into four sections, seventy miles from Amli in the north-east to Gopnath, eighty miles from Gopnath to Diu, 160 from Diu to Okhamandal, and 120 from Okhamandal to the head of the gulf of Cutch. The seventy miles from Amli at the head of the gulf of Cambay to Gopnath is partly a low muddy foreshore lined with mangroves, and partly sandy and rocky. The eighty miles from Gopnath to Diu head present a succession of cliffs of moderate height, sometimes hollowed by the sea into caverns. From the sea the south coast is singularly pleasing. Bold headlands and white flat-roofed picturesque towns succeed each other, the sea is gay with dancing fishing-boats and heavy laden cotton craft, and along the shore, behind the line of white breakers appear deep green palm-groves, and up broad estuaries are views of rolling plains and glimpses of far-off hills. The one hundred and sixty miles from Diu to the point of Okhamandal is generally flat and fringed with a line of windblown sand hills. The one hundred and twenty miles from Okhamandal point to the head of the gulf of Cutch is throughout a line of low reefs and muddy foreshore fringed with mangroves, low ugly stretches often transformed by the mirage into shifting scenes of rock and castle, shady groves, and still lakes.

INLAND. Page 9

In the Bhal land along the north-east, during the rainy season (June-October), the country is under water and between the low island village sites communication is cut off except by boat. In the cold weather (November-February) the Bhal is covered with miles of unbroken wheat fields. The harvest (February-March) is a time of life and activity. But when the crop is housed, this black level tract, open to a burning sun and swept by hot winds and clouds of salt dust, is a region to be shunned almost as carefully as the neighbouring Ran. Beyond these coast tracts the country is a rolling plain watered by numerous streams and broken by groups and ranges of hills.

HILLS. Page 9

Most Kathiawar hills belong to one of two systems, which, running north-east and south-west, from irregular chains, crossing the country in nearly parallel lines.

NORTHERN SERIES. Page 9-10

Speaking generally the northern series of hills is characterised by sterility. In their eastern extension they present low ridges of white or reddish sandstone, and purple green or grey shales, through which traps occasionally crop. Towards the centre large areas are occupied

by flows of basalt, and westward, traps and occasionally iron-clay are met, passing again under beds of chalky sandstone. In parts, the hills are utterly barren ; in others they are thinly covered with patches of cactus scrub and low bushes, but nothing in the shape of a tree is seen until, in the extreme west, some of the more secluded valleys of the Barda hills are filled with a dense growth of trees and bamboos.

SOUTHERN SERIES. Page 10

The general direction of the southern series of hills is similar to that of the northern series or Gir, but in physical characteristics they differ considerably. Beginning at its west end, within a few miles of the coast not far from Mangrol, and leaving on the north the great isolated Girnar, which, rising from an encircling chain of woody hills, rears its granite peaks 3600 feet above the sea, the Gir hills stretch eastward in a chaos of peaks, ridges and outlying spurs, densely clothed with forest, and varying in height from 1500 to over 2000 feet. The range, which at first consists of a few detached moderately sized hills, soon fills a breadth of nearly thirty miles, and again narrows as it trends eastward, while the forest gives place to grass and low brushwood, until in the neighbourhood of Gadhakda and Ambaldi, a break occurs, and the spurs of the Gir sink into a waving plain, crossed by low stony ridges and scored by the head streams of the Dhantarvar river. Beyond the Shatrunji the range once more appears in the detached masses known as the Shatrunjaya and Lonch hills, rising abruptly to heights of 1500 and 2000 feet respectively, and in two ranges of less elevation, called the Lamdhar and Khokara hills, which carry on the direction northward to the neighbourhood of Sihor, where they sink within sight of the waters of the gulf of Cambay.

Page 11

The general formation consists of traps of varying composition associated with granite and gneiss, and passing under beds of calcareous sandstone which in parts assumes the nature of limestone. In appearance the various ranges composing the series differ considerably. At the eastern end the hills are rocky and barren, though some, as the Shatrunjaya and Lonch hills, are thinly covered with low brushwood and many furnish abundance of grass. To the south of the Shatrunji the Mordhar hills, or Lesser Gir, present a continuous range of rocky grass-covered slopes, which rise abruptly on the north side and on the south end in long spurs running to the south-west. The hill-tops are generally bare, but the ravines hold some small timber. Westward lies the wild tract of the Gir proper. On the outskirts the hills are covered with little but grass, and brushwood, chiefly *palas* *Butea frondosa* and *khair* *Acacia catechu*, in the ravines. Further in the forest gradually thickens till, throughout the western portion and again in the outlying group of the Girnar, the hill sides are densely clothed with trees, including *sag* or teak *Tectona grandis*, *sajad* *Terminalia glabra*, *roma* *Soymida febrifuga*, *ambli* *Emblica officinalis*, *molar* *Odina wodier*, *karanj* *Pongamia glabra*, *karapti* *Garruga pinnata*, *timbru* *Diospyros exculpta*, *saleta* *Boswellia glabra*, *beheda* *Terminalia bellerica*, and *ujal* *Nauclea parvifolia*.

Page 12

From June, when the south-west monsoon begins to December the Gir is dangerous to live in, owing to the malaria produced by its extensive forests and its poisonous water. The poor villagers, tempted by favourable terms to settle on its outskirts, have a wretched yellow corpse-like look, few of them without scars produced by cautery. Sidis alone seem able to stand the noxious climate. A few of them, chiefly the descendants of runaway slaves, occupy hamlets on the borders of the Gir, without appearing to suffer, and tend the cattle, which at all seasons thrive in the Gir. In November, after the unhealthy months are over, droves of cattle frequent the Gir, and temporary hamlets or *neses* are inhabited chiefly by Charans, a few of whom are sometimes tempted to remain throughout the year.

Among the specially interesting hills of the southern series are the Girnar, anciently Ujajanta and Raivata, famous for the Jain Temples on its summit and the inscriptions of Maurya, Sah, and Gupta kings carved on a granite boulder near its base ; Shatrunjaya or Palitana hill crowned with magnificent Jain temples ; Nandivelo and Tulsi Shyam hills of the Gir, the former a well-known landmark for sailors, the latter containing a noted shrine and hot spring reckoned one of the most sacred spots in the province ; and the hills of Talaja, Lor, and Sana famous for their Buddhist caves.

GULF OF CUTCH. Page 12

The gulf of Cutch is a large bay of the Arabian sea, lying between the coasts of Cutch on the north and of Kathiawar on the south, with its head bounded by a portion of the debatable land called the Ran. The mouth of the gulf lies between north latitude $22^{\circ}30'$ and $22^{\circ}52'$. Thus the gulf is about twenty-five miles across at the mouth, and barely eight at the head.

GULF OF CAMBAY. Page 35

The Gulf of Cambay as understood by seamen, includes the area of water which lies between the south-east of Kathiawar on the one side, and the coasts of Broach, Surat, and part of the North Konkan on the other. The gulf proper has its south-west limit at Gopnath point in Kathiawar, and its eastern limit is the mouth of the Tapti. From this it runs north, gradually tapering till it reaches the Sabarmati on the north and the Mahi on the north-east, at whose mouth is the old trade centre of Cambay or Khambhat, from which the gulf takes its name. This area stretches between north latitude 21° and $22^{\circ}20'$ and east longitude $72^{\circ}5'$ and $72^{\circ}45'$.

WEST COAST GOPNATH POINT. Page 41

From the Sabarmati the west or Kathiawar shore of the gulf stretches seventy miles south from Khun landing to Gopnath point.

The twenty miles of coast from Ghogha to Morchand is tolerably high, much broken by ravines and with trees near the villages. The country belongs to the Thakor of Bhavnagar, whose territory stretches round Gopnath point and west as far as Chanch creek. The coast between Mitiviri and Gopnath point is low and fringed with sand-hills, and dry banks run out two miles from the shore. Inside the sand-hills, towards Shatrunji river, the country is low, and overflowed at spring tides. South of that river to Gadhula, a little north of Gopnath, is a low sandy shore. The country inland is open and rather well tilled, with no bushy trees except near the villages, but the leafless thorn-bush is seen all over the country.

RIVERS. Page 60

The two belts of hill country that cross the breadth of Kathiawar constitute two distinct water partings, and from them, as well as from a narrow stretch of table-land which occupies the centre of the province and forms a connecting link between them, flow all the rivers and streams by which the peninsula is drained. At first swift and clear, gliding along rocky channels, between steep banks, these rivers flow from the inner of the two hill tracts, outward to all points of the compass, and winding sluggishly through the low-lying lands of the sea-board, enter the sea at points nearly opposite the slopes where they take their rise. Thus on the north and north-west they flow from the hills to the Ran and gulf of Cutch ; on the east they head direct for the Ran and gulf of Cambay ; and on the south and south-west they carry the drainage from the Greater and Lesser Gir into the Arabian sea ; while, from the counter slopes of the opposing chains of hills, the two largest rivers of the province, the Bhadar and the Shatrunji, rising at almost opposite points flow inward towards each other, until meeting the drainage thrown from the flanks of the connecting links of table-land, they bend to either hand and

receiving the contents of various tributaries as they skirt the base of their respective ranges, flow through the plains separating the two hill tracts, the Bhadar westward to the Arabian sea, the Shatrunji eastward to the Gulf of Cambay.

THE BHADAR. Page 61

Though during the south-west monsoon they pour seaward in turbid floods, the Kathiawar rivers are of inconsiderable size. Among them are nine leading streams, the Bhadar, Shatrunji, Machu, Aji, Bhogavas, Sukha-Bhadar, Keri, Ghela and Kalubhar. Of these the BHADAR, the largest river of the province, rises from springs in a range of hills a few miles to the north of the town of Jasdan, and before falling into the sea at Navi Bandar, has a course of about one hundred and twenty miles.

THE SHATRUNJI. Page 62

The sacred SHATRUNJI has, including windings, a south-easterly course of about one hundred miles, from its rise in the Dhundi hills of the Gir, to Sultanpur where it enters the Gulf of Cambay.

THE MACHU. Page 62

The MACHU, with a course of over seventy miles, rises near the town of Anandpur in the northern belt of hills and flows under the walls of Vankaner and Morvi into the Ran of Cutch at Malia.

THE AJI. Page 63

The AJI, which is somewhat similar in character to the Machu, rises near Sardhar in the same series of hills, and flowing under the walls of Rajkot receives from the left, some twenty miles beyond that town, the united streams of the Dhondi and the Niari, on whose banks, stands the town Pardhari, and after a course of about sixty miles falls into the Gulf of Cutch near Balambha.

Indira
Gandhi

THE BHOGAVA. Page 63

The Wadhwan and Limbdi BHOGAVA with course of about seventy miles, rise near each other in the hills about Chotila, and flow eastward in broad sandy shallow channels, under the walls of Wadhwan and Limbdi respectively, losing themselves in the sand and silt of the Nal or Ran of Cambay.

THE SUKHA BHADAR. Page 63

The SUKHA BHADAR, of about the same size as the Bhogavas, rises on the eastern flank of the hills in which its namesake the Bhadar has its source, and, flowing to the east instead of to the west passes the town of Ranpur, and enters the Ran of Cambay near its junction with the gulf.

The Keri, the Ghela, and the Kalubhar are similar in size and character to the three last mentioned rivers. They flow east from the central highlands and meet on the coast, forming the tidal creek which enters the Gulf of Cambay near the town of Bhavnagar.

ISLANDS. Page 66

The leading islands on the Kathiawar coast are, Piram in the Gulf of Cambay ; Chanch, Shial, and Diu of the south coast ; Bet in the west ; and the Chanka islets in the Gulf of Cutch.

CHANCH. Page 66

Chanch, which though at high tide nearly surrounded by water, is never really an island, lies off the south coast about twelve miles west of Mahuva. It is a narrow strip four or five miles long and about half a mile broad, with its surface rising gradually towards its eastern end. The village of Chanch stands on its south-eastern corner.

MAHUWA

The ancient name of this town, which is situated in north latitude $21^{\circ}6'$ and east longitude $71^{\circ}49'$ on the shore of the Arabian Sea, was Moherak. It is about 55 miles south-west of Bhavnagar, and lies on the west bank of the river Malan. The soil of Mahuwa is very fruitful, and mangoes are grown here equal, if not superior to, Bombay mangoes. There are two gardens at Mahuwa where the betel vine is cultivated. The branching palmyra, or Ravana Tad, grows here. The Darbar has a large plantation of cocoanuts and other trees here, covering a space of about 1,500 acres, which is watered by irrigation channels. There are 170,000 cocoanut trees alone, and altogether about 340,000 trees in all.—*Extract from Kathiawar portion of the "Bombay Gazetteer" by Major J. W. Watson, 1878.*

OTHER ISLANDS. Page 67

In the Gulf of Cutch, a few miles from the mainland of Halar off Salaya, are the Chanka islands, a group of five—Chankha, Nora, Baida, Ajar and Chusda. They are raised very little above the sea and are mere banks of hard rough rock on which sand has gathered.

LAKES.

THE NAL. Page 68

The province contains a few lakes larger than village reservoirs. The most remarkable is the Nal, an extensive sheet of slightly brackish water on the north-eastern frontier of the province, at the head of the Ran of Cambay.

THE GHEDS. Page 68

The Gheds, situated in the neighbourhood of Madhavpur on the south-west coast, are large sheets of water, which in general appearance resemble the Nal and are usually known as the Ajak and Sil, Bagsara, and Madhavpur Gheds. During the cold weather all these lakes, as well as the Gheds at Miani, Raval, Barvada, and Visavada and other parts of the coast, are the resort of large flocks of flamingoes, geese, and pelican, and are alive with various species of duck, teal, and snipe.

RANS. Page 69

Of the Rans or salt wastes, which encircle the east and north-east of Kathiawar, the most remarkable are the Ran of Cutch and the Ran of Cambay.

LITTLE RAN. Page 69

From the head of the Gulf of Cutch stretches the dry bed of the sea or gulf that once surrounded Cutch on the south-east, east, and north. This tract, which for at least 2,000 years, has been known as the Ran, that is Aranya or the salt waste, is supposed to cover an area of about 9,000 square miles. For convenience, though there is neither separation nor change of character, this huge area may be divided into two parts, the Great Ran to the north and north-east of Cutch, about 160 miles from east to west, eighty miles from north to south, and an area of about 7,000 square miles, and the Little Ran, to the south-east and south of Cutch, about eighty miles from east to west, ten to forty from north to south and an area of about 1,600 square miles.

MIRAGE. Page 73

The mirage is one of the most notable peculiarities of the Ran. At midday, in the extreme west of the Ran, the soil, glittering with salt crystals, changes to a sea of glass, in which appear giant trees, lofty houses and massive village walls; or the ooze becomes a still summer sea with white gulls, old dismantled boats, and a distant line of grey coast. Further up the Ran, near Jhinjhuvada, seas and lakes appear with trees, hill, and bare grey rocks, reflected in their clear waters. Villages, flush with the ground, look as if perched on half-transparent rocks, whose rounded edges fade into a golden haze. Wild asses look like camels, cattle-bones like crystal

boulders, and an antelope not more than fifty yards off has been mistaken for a rock. Once, says Mr. Peyton of the Trigonometrical Survey (1876), a perfect picture of trees, fringing a long narrow lake, beguiled me some miles out of my course and faded in the wild expanse of sand.

GEOLOGY. Page 78

In tertiary and post-tertiary times Kathiawar was an island.

VOLCANIC ROCKS. Page 80

In central Kathiawar and all round the central system of hills, usually called Chotila but locally known as the Thanga hills, and in the Mandav Salimal ranges there have been trap overflows. Next there are the Barda hills, which, though they rise to 2,050 feet, appear to have been a vast elevation of trap with little or no overflow, for the whole surrounding plain is limestone. They may be said of the Alech range and of the Dalasa hills, though these latter seem to have overflowed. Then there are the Gir, Lesser Gir or Gohelwad hills, the Und range culminating in the peaks of Shatrunjaya, Lonch and Kamlo, and in the Sihor and Khokhra ranges. All these are trap and basalt overflows with limestone at their base.

The Girnar or Junagad hills are a typical variety of these rocks. The central peak is of precisely the type of form so common in Bengal in hills of granitoid gneiss, but the Girnar rock is mainly composed of white felspar.

GEOLOGY.

NEW TERTIARIES. Page 84

The highest portion of the present division is the constituting Piram island, which, through its rich mammalian fauna is connected with the great Sivalik deposits that fringe the Himalayan range. Bones of the following mammals have been found at Piram : *Mastodon latidens* and *M. perimensis* ; *Dinotherium indicum* ; *Acerotherium perimense* ; *Rhinoceros* sp. ; *Brahmatherium perimense* ; *Camelopardalis* sp. ; *Capra* sp. ; *Antelope* sp. ; and *sus hysudricus*. Several of these are also found in the Sivalik beds of Northern India, but *Brahmatherium*, a gigantic four-horned ruminant allied to *Sivatherium*, *Dinotherium indicum*, and some other species have, hitherto, been found only in Piram.

CLIMATE. Page 89

The climate of the peninsula is in general pleasant and healthy. January, February and March are marked by heavy dews and thick fogs. These fogs, which are more common inland than on the coast and which are generally followed by very hot days, form at day-break and are dispelled by the sun about nine. They are not unhealthy either to Europeans or natives. The hot weather begins in April and lasts until the rain falls about the middle of June. The hot wind blows in various degrees in different parts and is hottest in the south. On the coast it is little felt and very partially on the Jhalavad Ran. The hot weather months (April to June) are the healthiest in the year. From the end of September the climate undergoes a change and becomes unhealthy both to Europeans and natives. In September and October the heat of the sun is acutely felt, though the weather is cloudy. The latter part of November and the whole of December are in all respects like January.

The west Gohilwad and Halar is perhaps the pleasantest and healthiest part of the province. The neighbourhood of the Ran though hot and dry is not specially sickly, the people being healthy, stout, and good-looking. But the stagnant water and excessive vegetation of the Nal make it very unhealthy. Violent bilious attacks yielding in four or five days and followed by ague and fever, are the only special Kathiawar diseases. In the hottest weather the thermometer is seldom above 110 in the shade, although generally between 102 and 104. In the cold season it is seldom or never below 42.

CHRISTMAS FRIGATE-BIRD (*Fregata andrewsi*).

Adult Male.—Upperparts black, with a brown band on the wing; throat, foreneck and breast black with purplish sheen; abdomen white; bill lead blue; pouch red; feet flesh-colour; length 40 ins.; bill 5-6.1; tarsus 0.8. *Adult Female*.—Head, neck and upperparts black, with greenish sheen on the back and a brown band on the wing; breast and abdomen white; bill rose; feet red. *Young*.—Upperparts brownish-black; head and underparts white.

Range.—Eastern Indian Ocean. Breeds at Christmas I. (near Java). Egg-dates: February.

Notes.—The male is the only Frigate-bird with black plumage and white abdomen. The female can be distinguished from the female Great Frigate-bird by its black throat. The young of these two species are indistinguishable.

LESSER FRIGATE-BIRD (*Fregata ariel*).

Adult Male.—Plumage generally black with deep blue, purplish or greenish sheen on the back; underparts browner with a white patch on each side of the abdomen; bill grey; pouch red; feet black or reddish-brown; length 31.5 ins.; wing 21.1-22.2; tail 10.6-13.2; bill 3.1-4.2; tarsus 0.9. *Adult Female*.—Plumage mainly black with purplish sheen on the back; a chestnut collar on the hind-neck; a brownish patch on the wing-coverts; breast buffy white; a white patch on each side of the abdomen; bill bluish; skin of throat red; feet red. *Young*.—Upperparts brownish-black; head, neck, breast and abdomen white, streaked with rusty, the head sometimes brown.

Range.—South Atlantic and Indian Oceans and western Pacific, occasionally north to Japan and south to New Zealand. Breeds at South Trinidad I., off Brazil (*F. a. trinitatis*), Aldabra I., near Madagascar (*F. a. iredalei*), islands off northern Australia and New Caledonia and in the South Pacific (*F. a. ariel*). Egg-dates: April-July.

Notes.—Adults are distinguished from all other species by the conspicuous white patch on the side under the wing. This is the common species on Australian coasts but elsewhere seems to be rare.

PHALAROPES

Occasionally the voyager far from land will come across a party of small long-necked birds or a single individual resting on the water, and in certain favoured regions within the tropics he may pass flock after flock. When disturbed they fly off over the waves with the rapid flight and appearance of Snipe or Sandpipers. These are Phalaropes, the only wading birds which habitually settle on the water, sometimes called Sea-Snipe or Swimming Plovers. All other wading birds either remain on the coasts or if they cross the sea on migration keep straight on without settling. The name Phalarope is an Anglicised form of the Latin "*Phalaropus*" and means "coot-footed", being derived from the Greek *phalaris*=a coot and *pous*=a foot.

Except during the breeding season Phalaropes appear to spend most of their time at sea. Colonel R. Meinertzhagen has recently shown that their winter quarters are probably definite regions of the ocean though we have not sufficient information to define them accurately at present. One of their winter homes is on the off-shore border of the Humboldt current along the coasts of Peru and Chile, where both Northern and Red Phalaropes are common in winter. The Northern Phalarope also winters in great numbers in the seas adjacent to Borneo and the Moluccas and along the north coast of New Guinea; it is also abundant in winter on the Mekran and Sind coasts and in the northern part of the Arabian Sea.

The female Phalarope is larger and more brightly coloured than her mate and she does the wooing and takes the lead in selecting the nesting site. When she has laid the eggs her part is finished and the male incubates them and raises the brood.

NORTHERN OR RED-NECKED PHALAROPE (*Lobipes lobatus*).

Adult in summer.—Upperparts slate grey ; back striped with buff ; a white bar in the wing ; sides and front of neck rufous ; chin, throat, spot over eye and underparts white ; bill black ; feet bluish-grey. *Adult in winter*.—Upperparts greyish, more or less mixed with white ; a white bar in the wing ; front and sides of head, neck and underparts white, more or less mottled with greyish on the breast ; a blackish spot before the eye ; a dusky patch below and behind the eye ; bill black ; feet dusky. Bill rather long, slender and pointed ; toes webbed at base, with scalloped lobes terminally but small on the outer toe ; length 6.4–8 ins. ; wing 4–4.6 ; tail 2–2.5 ; bill 0.8–1.1 ; tarsus 0.8–0.9. *Young*.—Upperparts brownish-black, the feathers margined with rusty ; forehead and underparts white with brownish wash on chest and flanks ; feet bluish flesh-colour.

Range.—Circumpolar regions south in winter to the Mekran coast and Arabian Sea, the seas adjacent to northern New Guinea and the Moluccas and the coast of Peru, occasionally to Patagonia. On migration occurs on both coasts of the United States, the coasts of western and southern Europe and of Japan, China and the Philippine Isles. Breeds in Alaska, Canada, southern Greenland, Iceland, Spitzbergen, Scandinavia, the British Isles, Russia, Siberia, Saghalien, the Commander Isles and the Aleutian Isles. Egg-dates : May–July.

Notes.—The smallest species with slim neck, long slender bill and a white bar in the wing in all plumages. In summer the reddish neck contrasting with white throat and underparts are diagnostic. In winter plumage the back is darker grey than in the Red Phalarope and is striped with white ; and there is less white on the forehead.

Skuas are among sea birds analogous to the birds of prey. The Great Skua and its southern relatives, with their large size and broad wings with rounded primaries, have a considerable resemblance to Eagles and Buzzards, whilst the smaller Jaegers, with their long pointed wings and great powers of flight, may be regarded as representing Falcons. They are, in fact, largely birds of prey, feeding when on land in the breeding season on small mammals and large insects as well as on the eggs and young of other birds. They also feed on carrion and any floating animal matter or refuse picked up from the surface of the water. In addition, they attack Shearwaters, Gulls and Terns and force them to give up any food they may have secured. If the victim is pursued on the wing and drops the fish it may have secured, the Skua swiftly plunges down and seizes it, in many cases before it reaches the water.

POMARINE JAEGER OR SKUA (*Coprotheres pomarinus*=*Stercorarius pomatorhinus*).

Adult.—Top of head sooty black ; back, wings and tail dark greyish-brown, the bases of the primaries and their shafts whitish, forming a light band when the wing is spread ; neck and breast white, sides of neck straw-yellow, hind-neck, chest and sides barred with dusky ; abdomen and under wing-coverts greyish-brown (light phase) ; or underparts dark like the upperparts (dark phase) ; bill dull brown with black tip ; feet blackish ; tail long and wedge-shaped, the central feathers projecting with broad, rounded tips twisted vertically ; length 21–22 ins. ; wing 13.5–14.7 ; tail 5–9.6 ; bill 1.5–1.7 ; tarsus 1.9–2.2. *Young*.—Upperparts dark, greyish-brown, spotted with buff on scapulars and rump ; head, neck and underparts dull buff, barred with dusky (light phase) ; or entirely sooty greyish-brown barred with buff on rump, sides, breast and abdomen (dark phase) ; central tail-feathers not elongated.

Range.—Arctic Seas, south in winter to Peru, South Africa, Ceylon, Burma and northern Australia. Breeds on tundras of northern Alaska and Canada, western Greenland, Novaya Zembyla and northern Siberia. Egg-dates : May–June.

Notes.—Distinctly smaller and more graceful than the Great Skua and its southern allies, and when adult distinguished by its unique central tail-feathers. The whitish bar on the wing helps to distinguish it from the Arctic Skua, than which it is decidedly larger. The immature bird can only be distinguished in life by its size from young Arctic and Long-tailed Skuas.

PARASITIC JAEGER OR ARCTIC SKUA (*Stercorarius parasiticus* = *S. crepidatus*).

Adult.—Top of head, back, wings and tail dark ash brown, the primaries with white shafts ; sides of head and neck straw-yellow ; chin and breast dull white ; under wing-coverts, abdomen and under tail-coverts ash brown (light phase) ; or neck and underparts sooty-brown, only slightly lighter than upperparts, sometimes with a trace of straw-yellow on sides of neck (dark phase) ; bill brownish ; feet black ; tail long and wedge-shaped, the central feathers elongated and pointed ; length 17–20 ins. ; wing 11.5–13.4 ; tail 6.5–9.3 ; bill 1.1–1.5 ; tarsus 1.5–1.8. *Young*.—Upperparts mottled with various shades of brown ; upper tail-coverts barred with white and rufous ; underparts whitish barred with brown ; under wing-coverts barred with buff ; central tail-feathers pointed but not elongated.

Range.—Behring Sea, North Atlantic and Arctic Seas, south in winter to Chile, Argentina, South Africa, India, southern Australia and northern New Zealand. Breeds in the Commander and Aleutian Isles, Alaska, Canada, Greenland, Iceland, Scotland, northern Europe and Siberia. Egg-dates : May–July.

Notes.—Larger than the Long-tailed Skua, but smaller than the other species. When adult distinguished by its projecting central tail-feathers much shorter than those of the Long-tailed Skua, but pointed and not twisted like those of the Pomarine. The white shafts of the primaries are distinctive on close view, there being no other white area on the wing. Immature birds are not certainly recognisable in life.

LONG-TAILED JAEGER OR SKUA (*Stercorarius longicaudus* = *S. buffoni*).

Adult.—Top of head brownish-black ; mantle and upper tail-coverts greyish-brown ; wing-quills and tail-feathers almost black, the two outer primaries with white shafts ; sides of head and neck buffish-yellow ; breast white ; flanks, abdomen and under wing-coverts ash-brown ; bill brownish, with black tip ; feet bluish-grey, the ends of toes and webs black ; tail long and wedge-shaped, the two central feathers greatly elongated and pointed ; length 21–23 ins. ; wing 11.6–12.9 ; tail 9.4–14 ; bill 1.1–1.3 ; tarsus 1.5–1.7. *Young*.—Upperparts ash-brown, darkest on head, feathers of mantle and tail-coverts tipped with buff ; underparts greyish-white, barred with ash-brown ; central tail-feathers pointed but not elongated.

Range.—Arctic Seas, south in winter to California, Argentina, Gibraltar and Japan. Breeds north of the Arctic circle in Alaska, Canada, Greenland, Russia and Siberia. Egg-dates : June–July.

Notes.—The smallest of the Skuas, readily distinguished when adult by its long central tail-feathers, but not recognisable in life in immature plumage. The dark phase of this species appears to be very rare, and adults in this plumage have never been collected.

LESSER CRESTED TERN (*Sterna bengalensis*).

Notes.—Distinguished from the Crested Tern by its smaller size, rather paler mantle, orange tinged bill and in full plumage by its black forehead.

APPENDIX No. III

Florican Banding

TABLE 'A'

Showing reactions of male towards female decoy.

SPECIMEN No.	DATES	POSE OF FEMALE DECOY	COURTSHIP OF MALE	MATING
A	9-9-49	Head and neck arched, wings close to sides.	Complete.	No.
B	11-9-49	Head and neck outstretched, wings and shoulders close to sides.	"	"
C	11-9-49	" " "	"	"
D	14-9-49	Neck outstretched, wings and shoul- ders slightly apart, and the female decoy fixed close to ground.	Incomplete.	Yes.
*D	14-9-49	" " "	"	"
E	14-9-49	" " "	"	"
F	16-9-49	" " "	"	No.

* The same male mated twice within a few hours.

APPENDIX No. IV

TABLE 'B'

RECOVERIES OF LESSER FLORICAN BANDED IN BHAVNAGAR, (KATHIAWAR).*

RING No.	DATE OF RINGING	PLACE OF RINGING	DATE OF RECOVERY	PLACE OF RECOVERY
BF 5	23-7-43	Mithapur, (Bhal).	29-7-44	Badudi, Bhal (Gohilwad).
BF 67	15-8-43	Badhada.	30-7-44	Badudi, Bhal (Gohilwad).
BF 68	25-8-43	Malankun, (Gohilwad).	28-8-43	Malankun.
BHF 93	7-9-44	Trapaj.	8-7-46	Velavadar, Bhal.
BHF 94	7-9-44	Trapaj.	8-7-46	Velavadar, Bhal.
BHF 95	7-9-44	Gadhada near Trapaj.	4-8-47	Bhal.
BHF 124	28-7-45	Mithapur, (Bhal).	12-7-46	Mithapur, (Bhal).
BHF 205	27-8-45	Sathara near Trapaj.	15-8-49	Mithapur, (Bhal).
BHF 207	27-8-45	Sathara near Trapaj.	6-8-47	Mithapur, (Bhal).
BHF 229	12-7-46	Mithapur, (Bhal).	18-7-47	Halar Dist., 8 miles east of Rajkot.
BHF 232	12-7-46	Mithapur, (Bhal).	5-8-47	Bhal area.
BHF 236	12-7-46	Mithapur, (Bhal).	7-8-47	Mithapur, (Bhal).
BHF 237	12-7-46	Mithapur, (Bhal).	7-8-47	Mithapur, (Bhal).
BHF 248	14-7-46	Mithapur, (Bhal).	7-8-47	Mithapur, (Bhal).

* See J.B.N.H.S., 1950, Vol. 49 No. 2, page 212.

Table B—Continued

RING NO.	DATE OF RINGING	PLACE OF RINGING	DATE OF RECOVERY	PLACE OF RECOVERY
BHF 251	18-7-46	Palania vid, (Gohilwad).	16-8-46	Palania vid.
BHF 281	29-8-46	Allapur near Hathab, (Gohilwad).	23-8-47	Allapur near Hathab.
BHF 295	7-9-46	Trapaj, (Gohilwad).	5-8-47	Bhal.
BHF 343	6-8-47	Bhal arca, (Gohilwad).	15-8-49	Mithapur, (Bhal).
*BHF 391	16-8-49	Mithapur, (Bhal).	14-7-50	Baroda.

From 22-7-43 to 24-9-43, 100 male Floricans were banded, out of which two were recovered the next year. One of these was caught in the same district as it was formerly ringed in. A bird banded on 25-8-43, with number BF 68, was found dead three days later in the same area. From 27-7-44 to 8-9-44, 99 male Floricans were caught and banded. In 1945, from 20-7-45 to 1-10-45, 111 males and one female were banded, but none have been recovered. In 1946, 100 Floricans were banded, all of which were males. In this season, four birds were recovered of which two were in the same locality as banded (for details see table). In 1947, 67 male birds were banded between 25-7-47 to 24-9-47. Nine birds were recovered of which seven were of the previous year, one was of 1944, and one of 1945. Of these, five birds were recovered from the same respective 'vids' where they were first caught. In 1948, there was a famine and no birds were caught although some were seen as passing migrants. In 1949, I managed to catch 11 males out of which two proved to be birds banded in 1945 and 1947. One of these was caught from the same area where it was first ringed two years earlier. Altogether 489 birds were ringed in seven years of which 18 were recovered, giving an average recovery of 3.6 per cent (see Table 'B'). It is quite possible that some of the banded birds were caught by poachers, and useful information thus lost.

* This record was received when the paper was in the press. The author wishes to draw attention to the fact that this is the first record of a ringed bird obtained outside Kathiawar. He suggests that the bird was about to cross the Gulf on its westward journey to its breeding grounds.

KNOT

(Calidris canutus)

SIZE. About 10 inches. Slightly smaller than the Redshank with shorter bill and legs.

IDENTIFICATION. In Winter, the upper-parts are grey and the lower-parts from the breast are whitish. Bill, straight and black. Supercilium, white. Legs, stocky and olive-green. Eyes, black. In flight a white wing-bar is visible though not very conspicuous. Rump and tail, lighter coloured than the back; the tail being uniformly coloured. The primaries are blackish. The general appearance, behaviour and flight are much like that of the Dunlin; the bill being comparatively shorter. In Summer, the bird assumes a reddish-brown appearance with the under-parts bright rufous. The Knot is known to be found in very large numbers, packing together in large flocks on the sea-side. In flight a large flock of these birds is known as "A nation of Knots".

NOTES. Although the Knot is not recorded in Kutch and Saurashtra, it is very likely that this shore bird may occur with us and the student should look out for it on the sea coast.

DISTRIBUTION. A Holarctic species migrating southwards to the Mediterranean region, West coast of Africa, Asia and from the Black Sea to Persia and Baluchistan and down to Ceylon and Burma where it is rare. The range extends to Australasia.



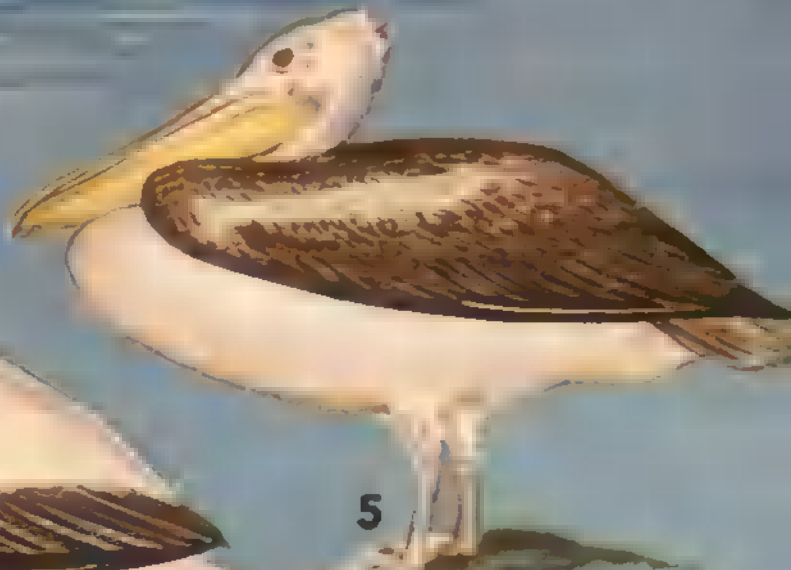
ILLUSTRATIONS



COLOUR PLATE 1.—(opposite)

- 1 DALMATIAN OR GREY PELICAN, page 11
- 2 GREAT CRESTED GREBE (SUMMER), page 3
- 3 INDIAN SKIMMER, page 222
- 4 LITTLE GREBE OR DABCHICK, page 1
- 5 WHITE OR ROSY PELICAN (IMMATURE), page 8
- 6 WHITE OR ROSY PELICAN (ADULT), page 8





COLOUR PLATE 2.—(opposite)

- 1 SHORT-TOED EAGLE (ADULT), page 51
- 2 IMPERIAL EAGLE (ADULT), page 29
- 3 WHITE-EYED BUZZARD-EAGLE (ADULT), page 24
- 4 OSPREY (ADULT), page 66
- 5 STEPPE EAGLE (IMMATURE), page 30
- 6 CRESTED HAWK EAGLE, page 25
- 7 PALLAS' FISHING EAGLE (ADULT), page 37





COLOUR PLATE 3.—(opposite)

- 1 COMMON OR WHITE-BACKED VULTURE (ADULT), page 43
- 2 NEOPHRON OR WHITE SCAVENGER VULTURE (ADULT), page 46
- 3 LONG-LEGGED BUZZARD (IMMATURE), page 22
- 4 BLACK OR KING VULTURE (ADULT), page 39
- 5 FULVOUS OR GRIFFON VULTURE (ADULT), page 41
- 6 CRESTED HONEY-BUZZARD (IMMATURE), page 13
- 7 LONG-BILLED VULTURE (ADULT), page 42





COLOUR PLATE 4.—(opposite)

- 1 PEREGRINE FALCON (ADULT), page 54
- 2 PEREGRINE FALCON (IMMATURE), page 54
- 3 BRAHMINY KITE, page 17
- 4 MONTAGU'S HARRIER (ADULT FEMALE), page 48
- 5 PALE HARRIER (ADULT MALE), page 47
- 6 COMMON PARIAN KITE, page 15
- 7 BLACK-WINGED KITE, page 12
- 8 MARSH HARRIER (IMMATURE), page 50





COLOUR PLATE 5.—(opposite)

- 1 INDIAN SERPENT EAGLE, page 52
- 2 INDIAN TAWNY EAGLE (ADULT-WHITE PHASE), page 32
- 3 BONELLI'S EAGLE (ADULT FEMALE), page 26
- 4 SAKER FALCON OR CHERRUG (ADULT FEMALE), page 61
- 5 LAGGAR FALCON (ADULT FEMALE), page 59
- 6 LAGGAR FALCON (IMMATURE MALE), page 59



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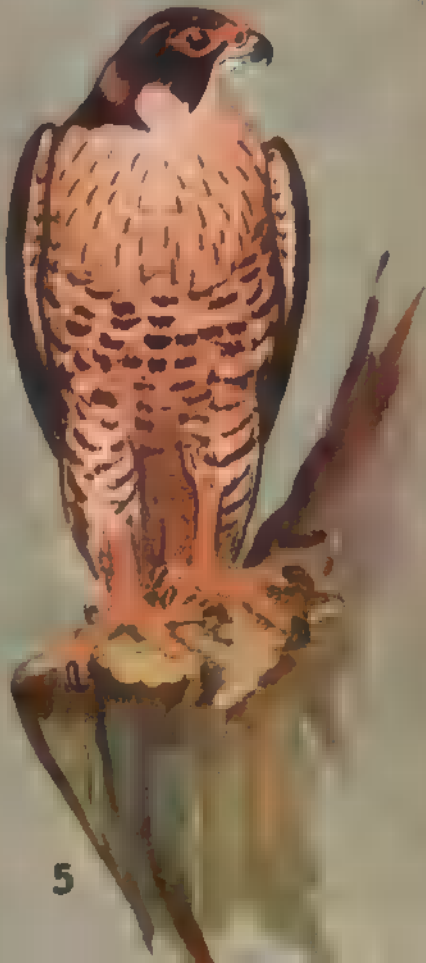


COLOUR PLATE 6.—(opposite)

- 1 HOBBY, page 62
- 2 RED-HEADED MERLIN (ADULT FEMALE), page 64
- 3 KESTREL (ADULT MALE), page 65
- 4 SHIKRA (ADULT & IMMATURE), page 19
- 5 SHAHIN FALCON (ADULT FEMALE), page 56
- 6 SPARROW HAWK (IMMATURE), page 21

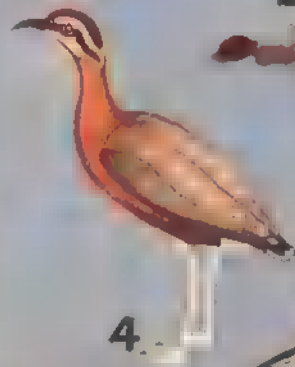
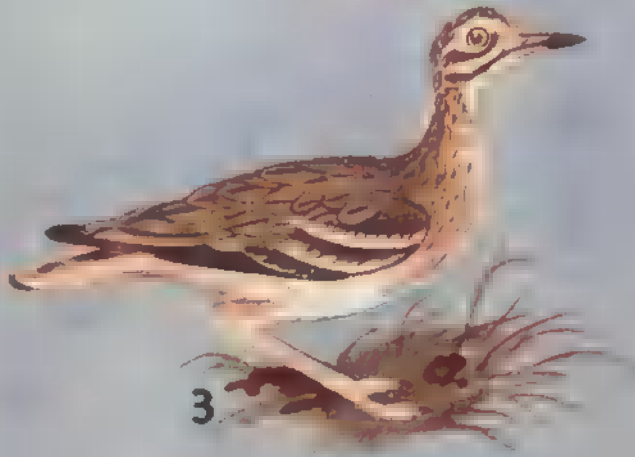


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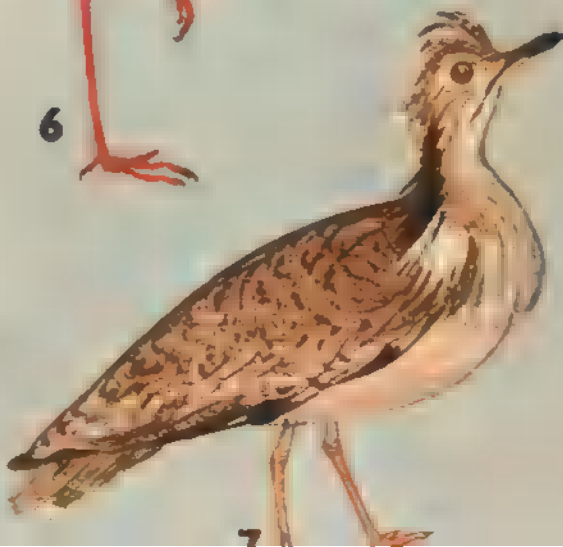
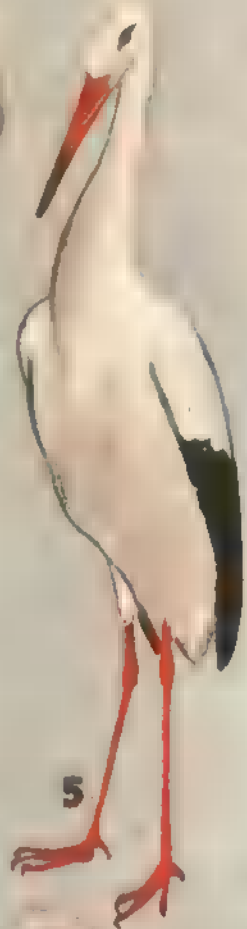
COLOUR PLATE 7.—(opposite)

- 1 TURNSTONE (SUMMER), page 193
- 2 CURLEW, page 183
- 3 INDIAN STONE CURLEW, page 166
- 4 INDIAN COURSER, page 208
- 5 INDIAN LITTLE GREEN HERON, page 71
- 6 INDIAN POND HERON (SUMMER), page 72
- 7 CHESTNUT BITTERN, page 82
- 8 INDIAN BLACK IBIS, page 84
- 9 GLOSSY IBIS, page 85



COLOUR PLATE 8.—(opposite)

- 1 NIGHT HERON (ADULT & IMMATURE), page 81
- 2 INDIAN SPOONBILL, page 86
- 3 LITTLE CORMORANT, page 4
- 4 GREY HERON, page 68
- 5 WHITE STORK, page 91
- 6 WHITE-NECKED STORK, page 91
- 7 MACQUEEN'S BUSTARD OR HOUBARA (FEMALE), page 148
- 8 CREAM-COLOURED COURSER, page 207
- 9 OPENBILL STORK (IMMATURE), page 90



COLOUR PLATE 9.—(opposite)

- 1 SARUS CRANE, page 142
- 2 FLAMINGO, page 94
- 3 CRAB PLOVER, page 165
- 4 EASTERN GREY LAG GOOSE, page 98
- 5 BLACK-NECKED STORK (ADULT MALE), page 93
- 6 PAINTED STORK, page 88



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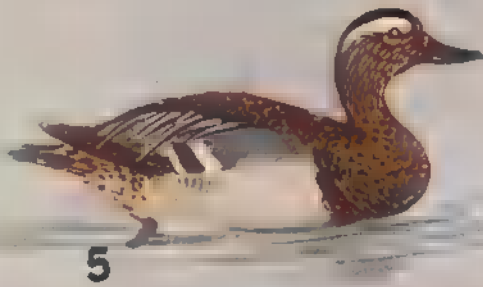
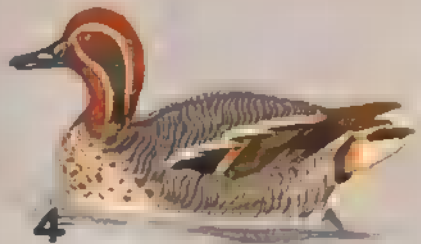
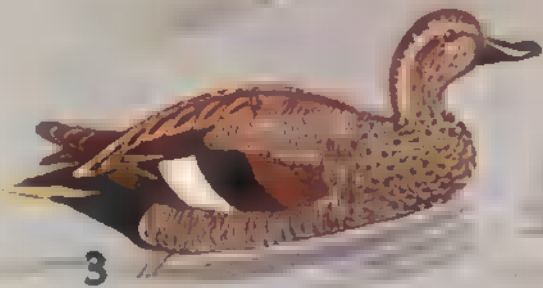
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COLOUR PLATE 10.—(opposite)

- 1 RUDDY SHIELD-DUCK OR BRAHMINY DUCK (MALE), page 101
- 2 MALLARD (MALE & FEMALE), page 103
- 3 GADWALL (MALE), page 106
- 4 COMMON TEAL (MALE), page 108
- 5 GARGANEY TEAL (MALE), page 110
- 6 SHOVELER (MALE), page 111
- 7 PINTAIL (MALE), page 109
- 8 WIGEON (MALE), page 107



COLOUR PLATE 11. — opposite

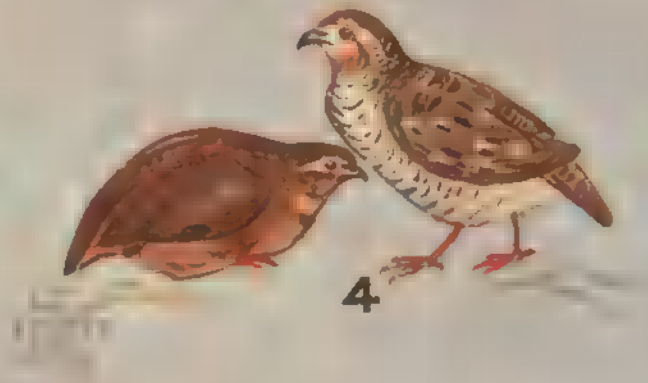
- 1 Lesser or Common Whistling Teal, page 92
- 2 Noddy or Great Black water-hen, page 110
- 3 Semipalm or Grey Duck, male, page 105
- 4 Lesser Pondicherry Duck, page 117
- 5 Common Pondicherry or Duck Duck, male, page 114
- 6 Red-bellied Pondicherry Duck, page 113
- 7 Marbled Teal, male, page 114
- 8 White-eyed Pondicherry Duck, page 115
- 9 Cotton Duck or [Image] Duck, male, page 117

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COLOUR PLATE 12.—(opposite)

- 1 COMMON OR GREY QUAIL (MALE & FEMALE), page 123
- 2 BLACK-BREASTED OR RAIN QUAIL (MALE & FEMALE), page 125
- 3 JUNGLE BUSH-QUAIL (MALE & FEMALE), page 126
- 4 ROCK BUSH-QUAIL (MALE & FEMALE), page 127
- 5 PAINTED PARTRIDGE, page 120
- 6 COMMON GREY PARTRIDGE OR FRANGOLIN (MALE), page 122
- 7 COMMON BUSTARD-QUAIL (MALE & FEMALE), page 163



COLOUR PLATE 13.—(opposite)

- 1 SIRKEER CUCKOO, page 138
- 2 KOEL (MALE & FEMALE), page 135
- 3 COMMON HAWK CUCKOO, page 132
- 4 CROW-PHEASANT OR COUGAL, page 137
- 5 BLOSSOM-HEADED PARAKEET (MALE), page 239
- 6 CRIMSON-BREASTED BARBET OR COPPERSMITH, page 274
- 7 INDIAN ROLLER, page 259
- 8 KASHMIR ROLLER, page 258





COLOUR PLATE 14.— (opposite)

- 1 PURPLE HERON, page 70
- 2 CATTLE EGRET (BREEDING), page 74
- 3 GREAT INDIAN BUSTARD (FEMALE), page 145
- 4 LITTLE EGRET, page 79
- 5 LESSER FLORICAN (MALE), page 150
- 6 LESSER FLORICAN (FEMALE), page 150
- 7 EASTERN CURLEW, page 183, (HEAD OF WHIMBREL), page 182
- 8 DEMOISELLE CRANE, page 144
- 9 INDIAN REEF HERON (DARK VARIETY), page 78
- 10 EASTERN COMMON CRANE, page 140



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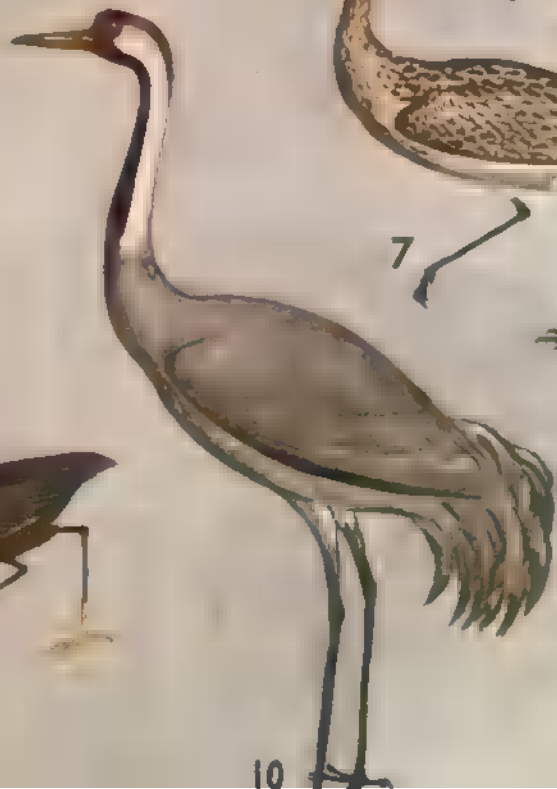
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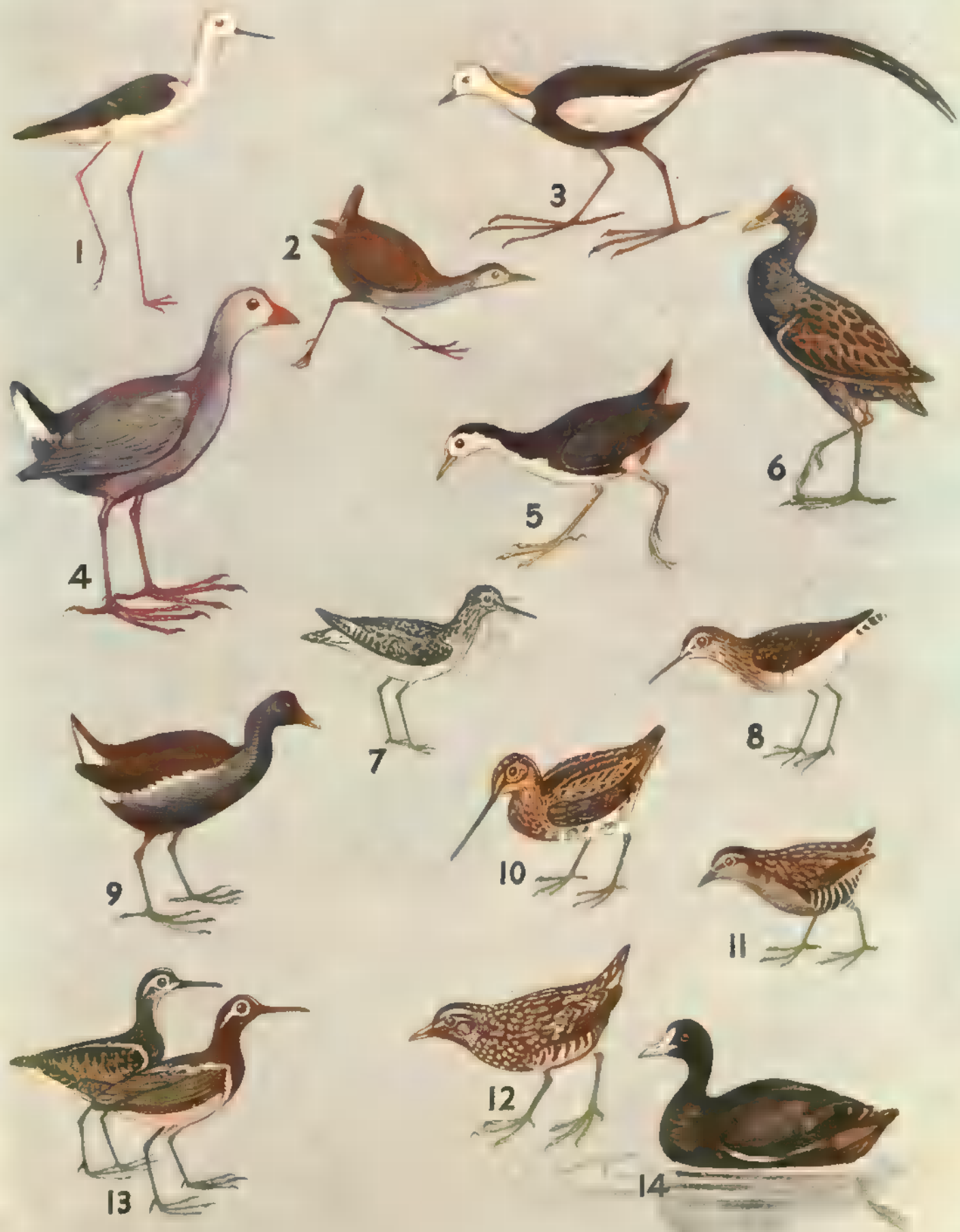
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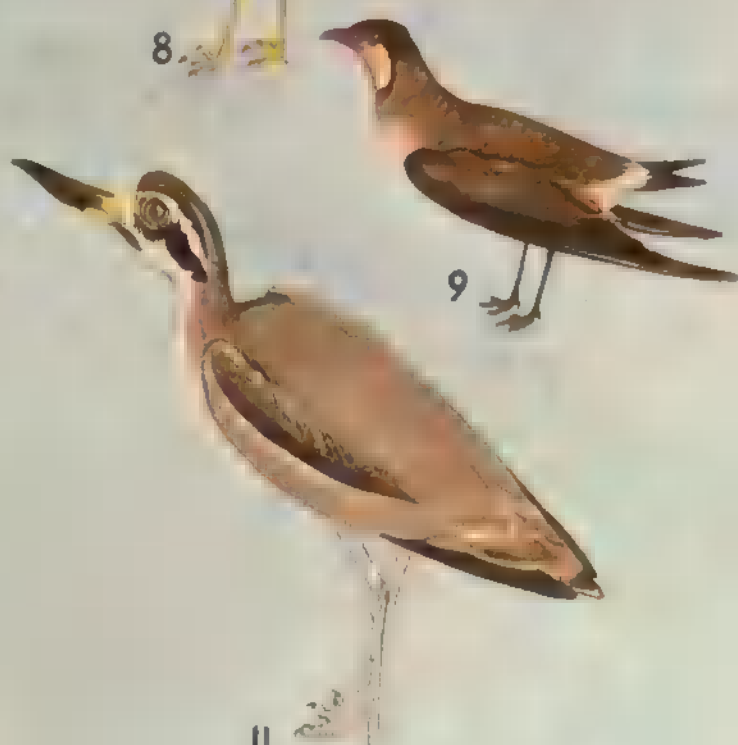
COLOUR PLATE 15.—(opposite)

- 1 BLACK-WINGED STILT, page 203
- 2 BROWN CRAKE (BREEDING), page 154
- 3 PHEASANT-TAILED JAÇANA (BREEDING), page 164
- 4 PURPLE MOORHEN, page 158
- 5 WHITE-BREASTED WATER HEN, page 156
- 6 WATERCOCK OR KORA (JUVENILE MALE), page 155
- 7 WOOD SANDPIPER (AUTUMN), page 191
- 8 GREEN SANDPIPER (AUTUMN), page 190
- 9 INDIAN MOORHEN, page 157
- 10 FANTAIL SNIPE, page 195
- 11 EASTERN BAILLON'S CRAKE, page 153
- 12 SPOTTED CRAKE, page 154
- 13 PAINTED SNIPE (FEMALE IN FOREGROUND), page 205
- 14 COOT, page 159



COLOUR PLATE 16.—(opposite)

- 1 JERDON'S LITTLE RINGED PLOVER, page 177
- 2 KENTISH PLOVER (MALE-SUMMER), page 179
- 3 LESSER SAND PLOVER (WINTER), page 180
- 4 EASTERN GOLDEN PLOVER, page 175
- 5 GREY PLOVER (WINTER), page 175
- 6 LARGE SAND PLOVER (AUTUMN), page 181
- 7 RED-WATTLED LAPWING, page 172
- 8 YELLOW-WATTLED LAPWING, page 173
- 9 PRATINCOLE, page 209
- 10 OYSTER-CATCHER (WINTER), page 169
- 11 GREAT STONE CURLEW, page 168



COLOUR PLATE 17.—(opposite)

- 1 CURLEW-SANDPIPER (WINTER), page 200
- 2 MARSH SANDPIPER (WINTER), page 188
- 3 AVOCET, page 205
- 4 TEMMINCK'S STINT, page 198
- 5 DUNLIN (SUMMER), page 199
- 6 RUFF (JUVENILE MALE-WINTER), page 202
- 7 LITTLE STINT (WINTER), page 198
- 8 BLACK-TAILED GODWIT (WINTER), page 185
- 9 SANDERLING (WINTER), page 197
- 10 COMMON SANDPIPER (WINTER), page 192
- 11 WESTERN TEREK SANDPIPER (WINTER), page 191
- 12 REDSHANK (SUMMER), page 187
- 13 GREENSHANK (AUTUMN), page 189



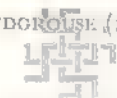
COLOUR PLATE 18.—(opposite)

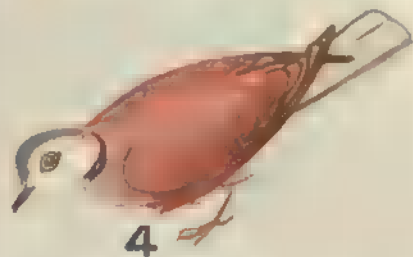
- 1 GULL-BILLED TERN (WINTER), page 216
- 2 INDIAN DARTER OR SNAKE BIRD, page 7
- 3 INDIAN WHISKERED TERN (BREEDING), page 214
- 4 BLACK-BELLIED TERN (BREEDING), page 220
- 5 CASPIAN TERN, page 216
- 6 BROWN-HEADED GULL (WINTER), page 212
- 7 BLACK-HEADED GULL (SUMMER), page 211
- 8 SLENDER-BILLED GULL (WINTER), page 212
- 9 YELLOW-LEGGED HERRING GULL, page 214
- 10 GREAT BLACK-HEADED GULL (AUTUMN), page 210



COLOUR PLATE 19.—(opposite)

- 1 EUROPEAN BEE-EATER, page 264
- 2 INDIAN PITTA, page 280
- 3 INDIAN ROSE-RINGED PARAKEET (MALE), page 237
- 4 INDIAN RED TURTLE DOVE (MALE), page 236
- 5 INDIAN RING DOVE, page 235
- 6 INDIAN SPOTTED DOVE, page 232
- 7 COMMON INDIAN SANDGROUSE (MALE & FEMALE), page 223
- 8 SOUTHERN GREEN PIGEON, page 228
- 9 PAINTED SANDGROUSE (MALE & FEMALE), page 226





COLOUR PLATE 20.— (opposite)

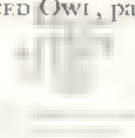
- 1 COMMON GREY HORNBILL, page 269
- 2 BLACK-CAPPED BLACKBIRD, page 351
- 3 PEACOCK, page 128
- 4 SPOTTED SANDGROUSE (MALE & FEMALE), page 224
- 5 DESERT LARK, page 286
- 6 IMPERIAL SANDGROUSE (MALE & FEMALE), page 225
- 7 SHIELD-DUCK, page 101
- 8 BLACK-NECKED GREBE (MALE-WINTER), page 2

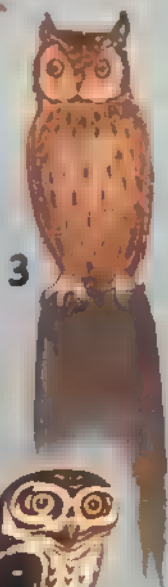




COLOUR PLATE 21.—(opposite)

- 1 COMMON INDIAN NIGHTJAR, page 256
- 2 SYKES' NIGHTJAR, page 254
- 3 COLLARED SCOPS OWL, page 243
- 4 BARN OWL, page 252
- 5 SHORT-EARED OWL, page 250
- 6 SPOTTED OWLET, page 248
- 7 BROWN FISH OWL, page 247
- 8 LARGE MOTTLED WOOD OWL, page 249
- 9 GREAT HORNED OWL, page 243





COLOUR PLATE 22.-- (opposite)

- 1 WIRE-TAILED SWALLOW, page 296
- 2 COMMON GREEN BEE-EATER, page 265
- 3 COMMON KINGFISHER, page 261
- 4 BLUE-CHEEKED BEE-EATER, page 266
- 5 INDIAN PIED KINGFISHER, page 260
- 6 WHITE-BREASTED KINGFISHER, page 263
- 7 INDIAN HOUSE SWIFT, page 271
- 8 WESTERN PALM SWIFT, page 272
- 9 HOOPOE, page 268
- 10 ALPINE SWIFT, page 270

In Indian National



COLOUR PLATE 23.—(opposite)

- 1 YELLOW-FRONTED PIED WOODPECKER (MALE), page 276
- 2 BLACK-NAVED FLYCATCHER (MALE), page 313
- 3 GOLDEN-BACKED WOODPECKER (FEMALE), page 275
- 4 INDIAN PYGMY WOODPECKER (MALE), page 278
- 5 WRYNECK, page 279
- 6 CUCKOO, page 134
- 7 PIED CRESTED CUCKOO, page 130
- 8 WHITE-EYE, page 377

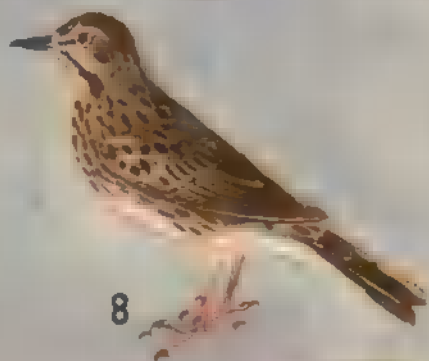


c



COLOUR PLATE 24. — (opposite)

- 1 SHORT-TOED LARK, page 287
- 2 SYKES' CRESTED LARK, page 290
- 3 SINGING BUSH LARK, page 282
- 4 SMALL SKYLARK, page 292
- 5 ASHY-CROWNED FINCH LARK (MALE & FEMALE), page 284
- 6 RUFOUS-TAILED FINCH LARK, page 285
- 7 PURPLE SUNBIRD (TWO MALES & A FEMALE), page 375
- 8 INDIAN TREE PIPIT, page 358
- 9 INDIAN PIPIT, page 359
- 10 BHAVNAGAR'S SAND-LARK, page 288



COLOUR PLATE 25.—(opposite)

- 1 INDIAN GREY SHRIKE, page 368
- 2 BAY-BACKED SHRIKE, page 370
- 3 PALE BROWN SHRIKE, page 372
- 4 COMMON WOOD SHRIKE, page 305
- 5 RUFOUS-BACKED SHRIKE, page 371
- 6 LARGE INDIAN CUCKOO-SHRIKE (MALE), page 306
- 7 DRONGO OR KING CROW, page 398
- 8 BLACK-HEADED CUCKOO-SHRIKE (MALE), page 307
- 9 CHIFF-CHAFF, page 334
- 10 DHARMAKUMARS' SMALL MINIVET (MALE), page 308



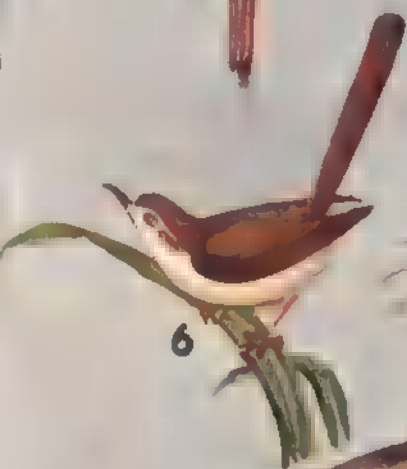
COLOUR PLATE 26.—(opposite)

- 1 INDIAN BROWN-BACKED ROBIN (MALE), page 349
- 2 BLUE ROCK THRUSH (MALE), page 352
- 3 INDIAN MAGPIE-ROBIN (MALE), page 348
- 4 PARADISE FLYCATCHER (MALE & FEMALE), page 311
- 5 EASTERN SPOTTED FLYCATCHER, page 316
- 6 RED-BREASTED FLYCATCHER (MALE), page 313
- 7 GREY-HEADED FLYCATCHER, page 316
- 8 WHITE-BROWED FANTAIL FLYCATCHER, page 318



COLOUR PLATE 27.—(opposite)

- 1 INDIAN HOUSE CROW, page 402
- 2 WHITE-BELLIED MINIVET (MALE), page 310
- 3 INDIAN JUNGLE CROW, page 404
- 4 GREY TIT, page 373
- 5 TREE-PIE, page 401
- 6 INDIAN YELLOW-EYED BABBLER, page 321
- 7 JUNGLE BABBLER, page 324
- 8 WHITE-THROATED BABBLER, page 320
- 9 GREY BABBLER, page 323
- 10 COMMON BABBLER, page 322



COLOUR PLATE 28.—(opposite)

- 1 RUFOUS-FRONTED WREN-WARBLER, page 340
- 2 KATHIAWAR WREN-WARBLER, page 338
- 3 TAILORBIRD, page 337
- 4 INDIAN LESSER WHITETHROAT, page 328
- 5 GREENISH WILLOW WARBLER, page 335
- 6 EASTERN ORPHEAN WARBLER, page 329
- 7 INDIAN GREAT REED-WARBLER, page 333
- 8 STREAKED FANTAIL WARBLER, page 345
- 9 ASHY WREN-WARBLER, page 342
- 10 INDIAN WREN-WARBLER, page 344
- 11 JUNGLE WREN-WARBLER, page 343



COLOUR PLATE 29.—(opposite)

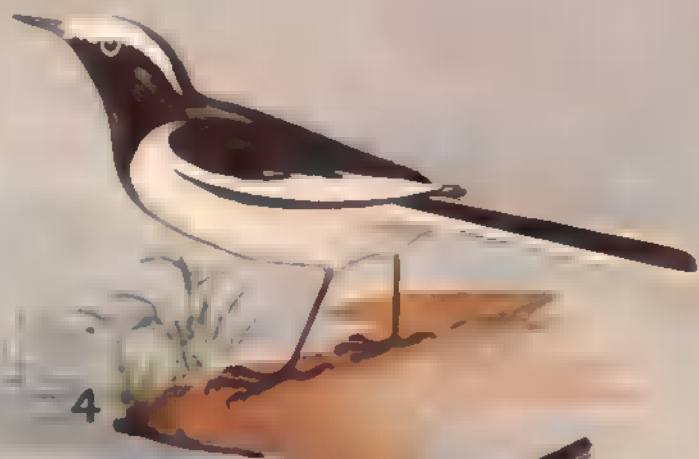
- 1 CENTRAL INDIAN IORA (MALE), page 303
- 2 RED-VENTED BULBUL, page 299
- 3 WHITE-EARED BULBUL, page 300
- 4 PIED BUSH-CHAT (MALE), page 356
- 5 PIED CHAT (MALE), page 355
- 6 INDIAN OR COLLARED BUSH-CHAT (MALE), page 357
- 7 DESERT CHAT OR DESERT WHEATEAR (MALE), page 353
- 8 MARSHALL'S IORA (FEMALE), page 304
- 9 BLUETHROAT (MALE), page 346
- 10 KASHMIR REDSTART (MALE), page 347



COLOUR PLATE 30.—(opposite)

- 1 SYKES' STRIATED OR RED-RUMPED SWALLOW, page 298
- 2 COMMON SWALLOW, page 295
- 3 INDIAN WHITE WAGTAIL, page 367
- 4 PIED WAGTAIL, page 366
- 5 GREY-HEADED YELLOW WAGTAIL, page 362
- 6 BLACK-HEADED WAGTAIL, page 363
- 7 YELLOW-HEADED WAGTAIL, page 364
- 8 EASTERN GREY WAGTAIL (MALE-WINTER), page 365





COLOUR PLATE 31.—(opposite)

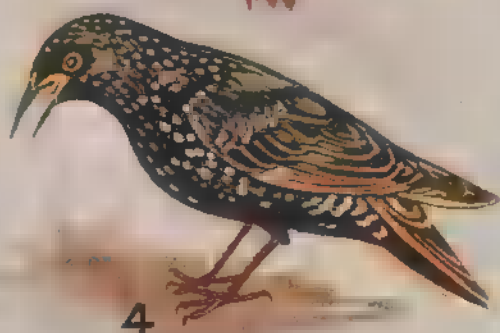
- 1 BAYA OR WEAVER BIRD
(MALE & FEMALE—BREEDING), page 384
- 2 WHITE-THROATED MUNIA, page 386
- 3 INDIAN SPOTTED MUNIA, page 388
- 4 BLACK-HEADED BUNTING (MALE), page 379
- 5 YELLOW-THROATED SPARROW, page 382
- 6 GREY-NECKED BUNTING, page 378
- 7 ROSE-FINCH (MALE & FEMALE), page 382
- 8 RED-HEADED BUNTING (MALE), page 380
- 9 HOUSE SPARROW (MALE & FEMALE), page 383
- 10 STRIOLATED BUNTING, page 380



COLOUR PLATE 32.—(opposite)

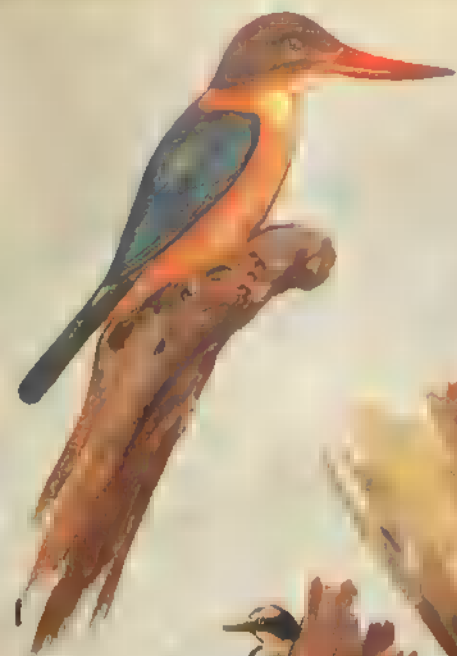
- 1 GOLDEN ORIOLE (MALE), page 395
- 2 BLACK-HEADED ORIOLE (MALE), page 397
- 3 ROSY PASTOR OR ROSE-COLOURED STARLING (MALE), page 390
- 4 STARLING, page 392
- 5 BRAHMINY OR BLACK-HEADED MYNA, page 388
- 6 BANK MYNA, page 394
- 7 COMMON MYNA, page 392





COLOUR PLATE 33.— (opposite)

- 1 BROWN-HEADED STORK-BILLED KINGFISHER, page 419
- 2 MALABAR TROGON (MALE & FEMALE), page 418
- 3 HEART-SPOTTED WOODPECKER (MALE & FEMALE), page 423
- 4 GREAT BLACK WOODPECKER (MALE), page 422
- 5 BLACK-CAPPED KINGFISHER, page 420
- 6 MALHERBE'S GOLDEN-BACKED WOODPECKER (MALE & FEMALE), page 423
- 7 BLACK-BACKED WOODPECKER (MALE & FEMALE), page 424
- 8 ORANGE MINIVET (MALE & FEMALE), page 427
- 9 SOUTHERN RUFOUS WOODPECKER (FEMALE), page 421
- 10 GOLD-FRONTED CHLOROPSIS (MALE), page 426



2



3



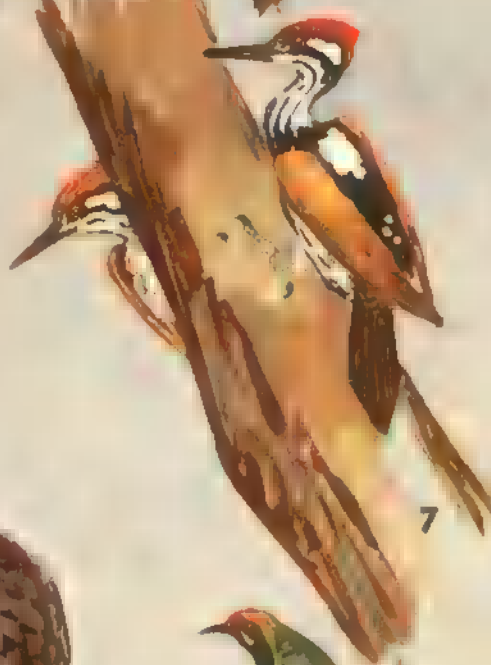
4



5



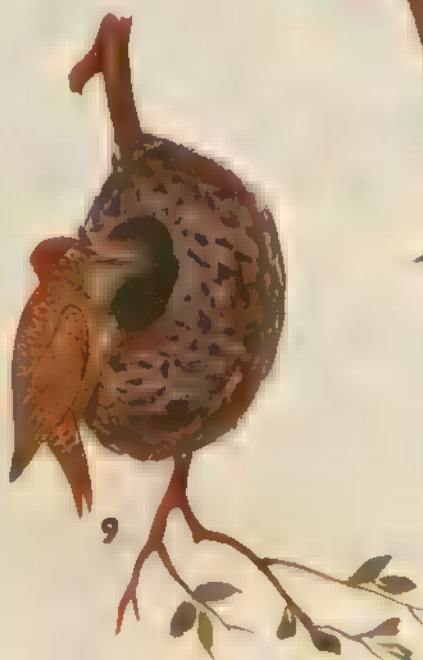
6



7



8



9



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Black-winged Kite at nest

Photo by: Y. S. Shivraj Khachar of Jasdán



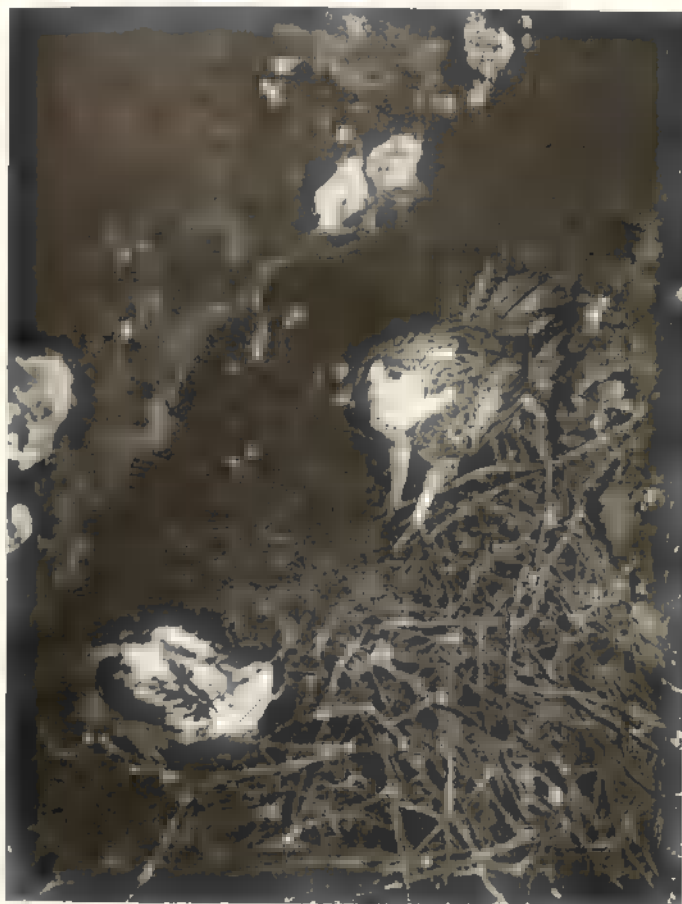
Female adult Goshawk on prey

Photo by: Author



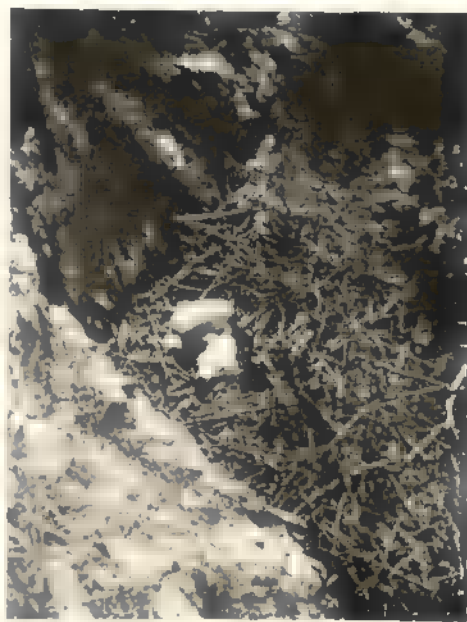
Female immature Goshawk
caught in Bhavnagar

Photo by: Jasdán



Male Bonelli's Eagle at nest
with young

Photo by: Author



Young Bonelli's Eagles in nest

Photo by: Author



Side view of immature Imperial Eagle

Photo by: Author



Front view of immature
Imperial Eagle

Photo by: Author



Sarus Crane alighting on nest

Photo by: Author



Sarus Crane settling on egg with male close by

Photo by: Author





Female Lesser Florican about to enter nest

Photo by: Author



Female Lesser Florican settling on eggs

Photo by: Author





Female Lesser Florican brooding

Photo by: Author

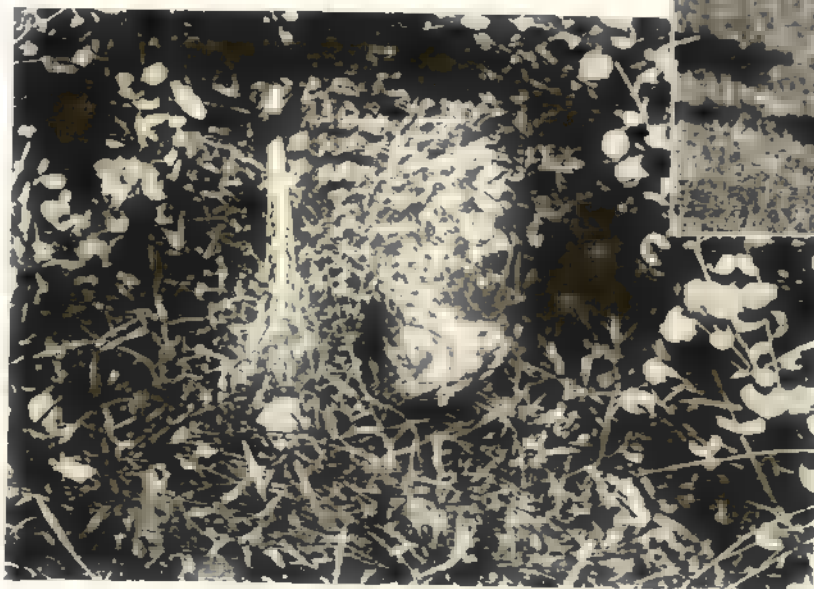
Female Lesser Florican with
Chick (just hatched)

Photo by: Author



Lesser Florican Chicks : 21
days old

Photo by: Author





Male Lesser Florican poised to attack male decoy

Photo by: Author

Male Lesser Florican with stuffed Stone Curlew in foreground

Photo by: Author





Male Lesser Florican mounting stuffed Stone Curlew

Photo by: Author



Great Stone Curlew

Photo by: Y. S. Shivraj Khachar of Jasdan



Author with captured male Lesser
Florican ready for Ringing



Jerdon's Little Ringed
Plover on nest

*Photo by: K. S. Lavkumar of
Jasdan*



Indian River Tern close to
nest and eggs

Photo by: Author



Black-bellied Tern on nest

Photo by: Author

Great Horned Owl in
aggressive pose

Photo by: Author



A pair of Common
Indian Nightjars

Photo by: Author



Red-winged Bush Lark in nest

Photo by : Author



Red-winged Bush Lark leaving nest

Photo by : Author





Cuck-Marshal's Iora brooding

Photo by: K. S. Lavkumar of Jaldan

Red-vented Bulbul feeding fledglings

Photo by: R. R. Shivsinhji of Hampur.





Rufous-fronted Wren-Warbler feeding young in nest

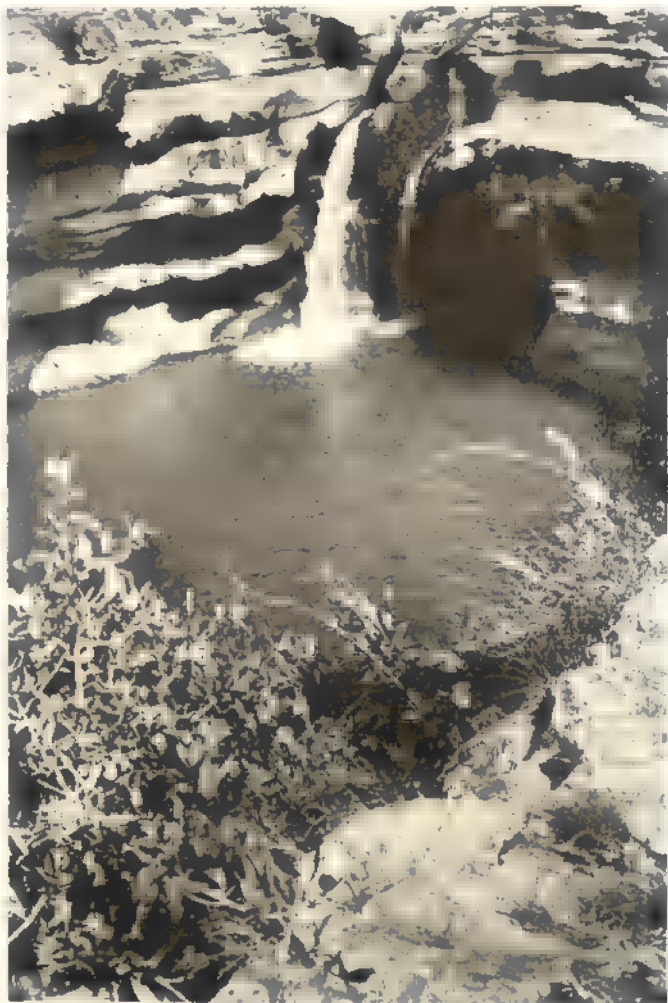
Photo by: Author



Rufous-fronted Wren-Warbler after feeding young

Photo by: Author





'Zanzario' waterfall close
to Jamwala, Gir Forest

Photo by: Author



A stream in the
Gir Forest

Photo by: Author



Hen Weaver Bird feeding
fledglings

Photo by: R. R. Shivsindhji of
Hampur



Brahminy Myna about to
feed young

Photo by: R. R. Shivsindhji of
Hampur

Weaver Bird building nest

Photo by: R. R. Shivsindhji of
Hampur





Gaurishanker Lake, Bhavnagar, one of the many lakes of Saurashtra

Photo by: Author



Bird-Observatory at Hingolgadh close to Jasdan

Photo by: Author

A typical hill scene in the Gir Forest

Photo by: Author





Khambhala Lake
in the Barda Hills

Photo by: Author



Cocoanut Plantation at
Mahuva (Gohilwad)

Photo by: Author



Girnar showing Western face

Photo by: Author

Girnar seen from
the Northern side

Photo by: Author



Datar Hill adjoining Girnar

Photo by: Author

GLOSSARY

<i>Antiali Paghadi</i>	An old version of Indian Turban which is still in vogue in Saurashtra.
<i>Bajri</i>	A species of Millet.
<i>Chinkara</i>	Indian Gazelle.
<i>Chital</i>	Spotted or Axis Deer.
<i>Dashera</i>	A Hindu festival falling in October.
<i>Dhobi ghats</i>	Places where laundry is washed.
<i>Diwali or Diwali</i>	A Hindu festival falling either in October or early November.
<i>Holi</i>	A Hindu festival falling in March.
<i>J. B. N. H. S. or B. N. H. S. Journal</i>	Journal of the Bombay Natural History Society.
<i>Jheel</i>	A reedy pond or lake.
<i>Jowar</i>	Milo crop or Great Millet.
<i>Khalavads</i>	Places where corn is thrashed.
<i>Mud-Gobies</i>	Mud-Skippers.
<i>Nes</i>	Living place of Herdsmen.
<i>Panjabols</i>	Homes for crippled animals.
<i>Ringing flight</i>	Flying in spirals.
<i>Safas</i>	Turbans.
<i>Seer peches</i>	Crests attached to Turbans.
<i>Shedhas</i>	Hedges demarcating fields.
<i>Vid</i>	Grassland.
<i>Wadis</i>	Irrigated Farms.
<i>Waits on</i>	A term used in falconry when a falcon circles high above, waiting for the falconer to flush the quarry.

INDEX OF SPECIES

Scientific names are printed in italics, English names are printed in capitals and Roman type is used for Gujarati names.

	Page		Page
Aaḍ or Dasāḍi	159	<i>platyrhynchos</i>	103
Abābil, Bhékhaḍ	297	<i>poecilorhyncha poecilorhyncha</i>	105
Dérāsari	295	<i>querquedula</i>	110
Gūr	294	<i>strepera</i>	106
Képhi	298	<i>Anastomus oscitans</i>	90
Lāharā	296	<i>Anhinga anhinga melanogaster</i>	7
Pardéshi Gār	294	<i>Anser albifrons</i>	408
Pardéshi Rétā	293	<i>anser rubrirostris</i>	98
Abābilō	271	<i>indicus</i>	98
Chotāliyō	273	<i>Anthropoides virgo</i>	144
Pahāḍi	270	<i>Anthus campestris</i>	360
Tāḍ	272	<i>campestris thermophilus</i>	361
Abalakh, Dariāi	169	<i>hodgsoni</i>	358
<i>Accipiter badius dussumieri</i>	19	<i>novaezeelandiae</i>	359
<i>gentilis</i>	18	<i>roseata</i>	361
<i>nisus</i>	21	<i>similis</i>	359
<i>nisus melanochistus</i>	22	<i>similis decapilus</i>	359
<i>nisus nisosimilis</i>	22	<i>trivialis</i>	357
<i>virgatus</i>	405	<i>Apus affinis affinis</i>	271
<i>virgatus affinis</i>	406	<i>melba</i>	270
<i>virgatus besra</i>	406	<i>Aquila clanga</i>	34
<i>Acridotheres fuscus</i>	395	<i>heliaca heliaca</i>	29
<i>ginginianus</i>	394	<i>nipalensis</i>	30
<i>tristis tristis</i>	392	<i>pomarina hastata</i>	36
<i>Acrocephalus agricola</i>	333	<i>rapax vindhiana</i>	32
<i>dumetorum</i>	332	<i>Ardea cinerea</i>	68
<i>stentoreus brunescens</i>	333	<i>purpurea</i>	70
<i>Actitis hypoleucos</i>	192	<i>Ardeola grayi</i>	72
Adharanga	314	<i>Ardeotis nigriceps</i>	145
<i>Aegithina nigrolutea</i>	304	<i>Arenaria interpres</i>	193
<i>tiphia humei</i>	303	<i>Artamus fuscus</i>	434
<i>tiphia tiphia</i>	302	<i>Asio flammeus flammeus</i>	250
<i>Aegypius monachus</i>	41	<i>Athene brama</i>	248
<i>Aethopyga siparaja vigorai</i>	439	AVOCET	205
Agan	282	Awāk or Wāk	81
Ja	292	<i>Aythya ferina</i>	114
Kāthiāwāḍi Āgiyā	283	<i>fuligula</i>	117
<i>Alaemon alaudipes doriae</i>	286	<i>marila marila</i>	116
<i>Alauda gulgula</i>	292	<i>nyroca</i>	115
<i>Alcoerl athis</i>	261	Babbai or Brāhmaṇi Ménā	388
<i>Alcippe poiocephala brucei</i>	326	BABBLER, BOMBAY QUAKER	326
<i>Amaurornis akool</i>	154	COMMON	322
<i>phoenicurus chinensis</i>	156	GREY	323
<i>Ammomanes phoenicurus phoenicurus</i>	285	INDIAN YELLOW-EYED	321
<i>Anas acuta acuta</i>	109	JUNGLE	324
<i>angustirostris</i>	113	SCIMITAR	320
<i>clypeata</i>	111	WHITE-THROATED	320
<i>crecca crecca</i>	108	Babūnā	377
<i>falcata</i>	410	Bādshāh ♀ Bādshēen ♂	21
<i>formosa</i>	410	Bādshēen ♂, Bādshāh ♀	21
<i>penelope</i>	107		

Bagli, Kāḷi Pān	407	BULBUL, WHITE-BROWED	426
Kāṇi	72	WHITE-EARED	300
Lili	71	Bulbul	299
Piḷi Pān	406	Kanarā	300
Sūrangī Pān	82	Safēd-Nēna	425
Baglō, Dariāi	78	Sipāhi	424
Dhor	74	BUNTING, BLACK-HEADED	379
Moṭō Safēd	76	CRESTED	381
Pardēshi Pān	82	GREY-NECKED	378
Baḷō, Nānō, or Nānō Hunj	96	RED-HEADED	380
Baḷō or Hunj	94	STRIOLATED	380
BARBET, COPPERSMITH OR CRIMSON- BREASTED	274	Buppaiyō	132
GREEN	420	<i>Burhinus oedionemus indicus</i>	166
Baṭāḍō, Dēshi	223	<i>recurvirostris</i>	168
Pahāḍi or Rangeet	226	BUSH-CHAT, INDIAN OR COLLARED	357
Shāhi or Moṭō Rājasthāni	225	PIED	356
Batak, Brāhmaṇi, or Sūrkhab	101	STOLICZKA'S	355
Choṭīli Kābari	117	BUSH-QUAIL, JUNGLE	126
Dariāi	116	ROCK	127
Dhōḷi, or Safēd Mūrgābi	113	BUSTARD, GREAT INDIAN	146
Moṭi Sisoṭi	409	MACQUEEN'S, OR HOUBARA	148
Nāni, or Mūrgābi	108	BUSTARD-QUAIL, COMMON	183
Nāni Sisoṭi	99	<i>Bustard teesa</i>	24
Ṭeelāvāli	105	<i>Buteo hemilasius</i>	23
Baṭēr, Bhārati Bil	162	<i>rufinus</i>	22
Bil	161	<i>vulpinus</i>	24
Chipagā	125	<i>Butorides striatus javanicus</i>	71
Ghāghas	123	BUTTON-QUAIL, INDIAN	162
Horn	163	LITTLE	161
BAYA OR WEAVER BIRD	384	BUZZARD, CRESTED HONEY	13
Bāz, Mor	25	LONG-LEGGED	22
Bāz ♀ Zūrrā ♂	18	UPLAND	23
BEE-EATER, BLUE-CHEEKED	266	BUZZARD-EAGLE, WHITE-EYED	24
EUROPEAN	264	<i>Calandrella cinerea</i>	287
GREEN	265	<i>raytal adamsi</i>	289
Bénaras	93	<i>raytal kishnakumarwihji</i>	288
Bésrā	405	<i>raytal raytal</i>	289
BESRA SPARROW HAWK	405	<i>Calidris albus</i>	197
Bhaḍakiyūn, Lāvari or	127	<i>Calidris canutus</i>	460
Vana, Vana Lāvari or	126	<i>alpinus alpinus</i>	199
Bhəri ♀ Bhéribachō ♂	54	<i>minutus</i>	198
Bhéribachō ♂, Bhéri ♀	54	<i>lasiaceus</i>	200
Bhimrāj	442	<i>temmincki</i>	198
Bhōn Chakli	284	<i>Caprimulgus asiaticus</i>	256
BITTERN	82	<i>europæus unwinii</i>	253
BLACK	407	<i>indicus</i>	254
CHESTNUT	82	<i>mahrattensis</i>	254
YELLOW	406	<i>monticola monticola</i>	255
BLACKBIRD, BLACK-CAPPED	351	<i>Centropus sinensis</i>	137
BLUETHROAT	346	<i>Cercomela fusca</i>	433
<i>Botaurus stellaris stellaris</i>	82	<i>Ceryle rudis leucomelanura</i>	260
<i>Bubo bubo bengalensis</i>	243	<i>Chaetornis striatus</i>	430
<i>coromandus coromandus</i>	246	Chakli	383
<i>zeylonensis</i>	247	Pahēlwān	382
<i>Bubulcus ibis coromandus</i>	74	Chakvā-Chakvi	166
Būlā	77	Moṭō	168
BULBUL, RED-VENTED	299	<i>Chalcophaps indica</i>	416
RED-WHISKERED	424	Chamchō	86
		Chanchaḷ, Tutvāri or	191

Chandul	290	<i>Circus aeruginosus aeruginosus</i>	50
Bhāvnagar-nō Rétāl	288	<i>cyaneus cyaneus</i>	49
Ghāghas	289	<i>macrourus</i>	47
Rana	286	<i>pygargus</i>	48
<i>Charadrius alexandrinus</i>	179	<i>Cisticola juncidis cursilans</i>	345
<i>dubius curonicus</i>	176	<i>Clamator jacobinus</i>	130
<i>dubius jerdoni</i>	177	<i>Columba livia intermedia</i>	231
<i>hiaticula</i>	177	COOT	159
<i>leschenaulti</i>	181	COPPERSMITH, CRIMSON-BREASTED BARBET OR	274
<i>mongolus atrifrons</i>	180	<i>Coprotheres pomarinus</i>	455
CHAT, BROWN ROCK	433	<i>Copsychus macrourus malabaricus</i>	431
DESERT, OR DESERT WHEAT- EAR	353	<i>sularis sularis</i>	348
INDIAN, OR COLLARED BUSH- ISABELLINE	357	<i>Coracias benghalensis benghalensis</i>	259
PIED	353	<i>garrulus semenowi</i>	258
PIED BUSH	355	<i>Coracina melanoptera sykesi</i>	307
RED-TAILED	354	<i>novae-hollandiae maclei</i>	306
STOLICZKA'S BUSH- STRICKLAND'S	355	CORMORANT, INDIAN LARGE LITTLE	5 4
Chatvā ♂, Tūrūmti ♀	64	<i>Corvus corax</i>	443
Cheel, Brāhmanī	17	<i>macrorhynchus culminatus</i>	404
Cheel, Kāshmiri, or Shīāḷō Samālī	18	<i>splendens splendens</i>	402
Cheel, Samālī or	15	<i>Coturnix coromandelica</i>	125
CHERRUG, SAKER FALCON OR	61	<i>coturnix coturnix</i>	123
Cherug ♀ Cherugélō ♂	61	COUCAL, CROW-PHEASANT OR	137
Cherugélō ♂, Cherug ♀	61	COURSER, CREAM-COLOURED INDIAN	207 208
<i>Chettusia gregaria</i>	170	CRAKE, BROWN	154
<i>leucura</i>	171	EASTERN BAILLON'S SPOTTED	153 154
Chétrā	110	CRANE, DEMOISELLE	144
Chhāpō, Dēshi	256	EASTERN COMMON SARUS	140 142
Franklin-nō	255	CREEPER, SPOTTED GREY	435
Pardēshi	253	CROW, INDIAN HOUSE INDIAN JUNGLE	402 404
Rétāl-	254	CROW-PHEASANT, OR COUCAL	137
Vana	254	<i>Crypsirina vagabunda</i>	401
Chibri	248	CUCKOO	134
Vana	418	COMMON HAWK-	132
CHIFF-CHAFF	334	INDIAN BANDED BAY	413
Chilotro	260	INDIAN PLAINTIVE	414
<i>Chlamydotis undulata macquensis</i>	148	PIED CRESTED	130
<i>Ochlonias hybrida indica</i>	214	SIRKEER	138
<i>leucoptera</i>	215	CUCKOO-SHRIKE, BLACK-HEADED LARGE INDIAN	307 308
CHLOROPSIS, GOLD-FRONTED JERDON'S	426 425	<i>Ouculus canorus</i>	134
<i>Chloropsis aurifrons</i>	428	<i>passerinus</i>	414
<i>jerdoni</i>	425	<i>sonnerati</i>	413
Chokhārā	411	<i>varius</i>	132
<i>Chrysocolaptes festivus</i>	424	<i>Oulicicapa ceylonensis calochrysea</i>	316
<i>lucidus chersonesus</i>	423	CURLEW	183
<i>Chrysomma sinensis</i>	321	EASTERN	183
Chūggad, Bhārati	241	GREAT STONE	168
Dēshi	243	INDIAN STONE	166
Līntāvāḷi	241	CURLEW-SANDPIPER	200
Pardēshi	242	<i>Cursorius coromandelicus</i>	208
<i>Ciconia ciconia</i>	91	<i>cursor cursor</i>	207
<i>episcopa</i>	91	<i>Cygnus columbianus jankowskii</i>	409
<i>nigra</i>	407		
<i>Circæus gallicus</i>	51		

<i>Cypsiurus parvus balasienis</i>	272	DRONGO, INDIAN GREY	400
DABCHICK, LITTLE GREBE OR	1	RACKET-TAILED	442
Dajyad	348	WHITE-BELLIED	400
Dākū	41	<i>Dryocopus javensis hodgsoni</i>	422
Darjido, Tashkō or	337	Dūbki	1
DARTER, INDIAN, OR SNAKE BIRD	7	Chotili	3
Dasādi, Aad or	159	Shyāmagreeva	2
Davāk	156	DUCK, BRAHMINY, RUDDY SHELD-	
Nāni, or Taphkhiri Santā-Kūkadī	154	DUCK OR	101
<i>Dendrocygna bicolor</i>	409	COMB, NUKHTA OR	118
<i>javanica</i>	99	GREY, SPOTBILL OR	105
Dhān Chidi	357	RUDDY SHELD-, OR BRAHMINY	
Dēshi	359	DUCK	101
Hodgaon-nō	361	SHELD	101
Lilāshvāli	358	Dūdhrāj or Tarwārīō	311
Patharāl	359	<i>Dumetia hyperythra</i>	320
Pilāshvāli	360	<i>hyperythra albigularis</i>	321
Dhēl ♀ Mor ♂	128	DUN-BIRD, COMMON POCHARD OR	114
Dhōl	235	DUNLIN	199
Dhōli-Ānkh or Karchiyā	115	<i>Dupetor flavicollis</i>	407
Dhōmdā-Dhōmdī	216	EAGLE, BONELLI'S	26
Dhōmdī, Chotili Dariāi	222	BOOTED	28
Kālāpētūni	220	CRESTED HAWK-	25
Nāni	221	GREATER SPOTTED	34
Pardēshi	219	GREY-HEADED	38
Safēdpākhvāli Kālī	215	IMPERIAL	29
Sāmānya	217	INDIAN SERPENT	52
Thobhāli	214	INDIAN TAWNY	32
Dhōmdō	212	LESSER SPOTTED	36
Gūlabi	212	PALLAS' FISHING	37
Kālā Māthānō	211	SHORT-TOED	51
Kālīpeethvālō	213	STEPPE	30
Moṭō Kālā Māthānō	210	WHITE-BELLIED SEA	36
Pilā-pagvālō	214	WHITE-EYED BUZZARD-	24
Dhōngili	179	EGRET, CATTLE	74
Dhōnk	88	EASTERN LARGE	76
Jamādār	408	LITTLE	79
Kālō	407	INDIAN SMALLER	77
Dhoti ♀ Dhūtār ♂	62	<i>Egretta alba modesta</i>	76
Dhoti ♀ Dhūtār ♂, Bhārati	63	<i>garzetta garzetta</i>	79
Dhūtār ♂, Bhārati Dhoti ♀	63	<i>gularis</i>	78
Dhūtār ♂, Dhoti ♀	62	<i>intermedia intermedia</i>	77
<i>Dicaeum agile</i>	374	<i>Elanus caeruleus vociferus</i>	12
<i>erythrorhynchos erythrorhynchos</i>	438	<i>Emberiza buehanani</i>	378
<i>Dicrurus caerulescens caerulescens</i>	400	<i>icterica</i>	380
<i>leucophaeus longicaudatus</i>	400	<i>melanocephala</i>	379
<i>macrocerus</i>	398	<i>striolata</i>	380
<i>paradiseus</i>	442	<i>Eremopterix grisea</i>	284
<i>Dinopium benghalense</i>	275	<i>Erethacus sueticus</i>	346
Diwāli Ghōdō	387	<i>Erythrina erythrina</i>	382
DOVE, EMERALD OR BRONZE-WINGED	416	<i>Erythropygia galactotes familiaris</i>	347
INDIAN RED TURTLE	236	<i>Estrilda amandava</i>	441
INDIAN RING	235	<i>formosa</i>	441
INDIAN SPOTTED	232	<i>Eudynamys scolopacea scolopacea</i>	135
LITTLE BROWN	234	<i>Eupodotis indica</i>	150
RUFIOUS TURTLE	232	<i>Falco cherrug cherrug</i>	61
<i>Dromas ardeola</i>	165	<i>chicquera chicquera</i>	64
DRONGO OR KING CROW	398	<i>jagger</i>	69
		<i>peregrinus</i>	54
		<i>peregrinus babylonicus</i>	58

INDEX

<i>peregrinus peregrinator</i>	56	Gāj-Pāṇ	203
<i>severus rufepedoides</i>	63	<i>Galerida cristata chendoola</i>	289
<i>subbuteo</i>	62	deva	290
<i>tinnunculus</i>	65	<i>Gallicrex cinerea</i>	155
<i>tinnunculus objugatus</i>	66	<i>Gallinago gallinago</i>	195
FALCON, LAGGAR	59	minima	196
PEREGRINE	54	stenura	194
RED-CAPPED	58	<i>Gallinula chloropus indica</i>	157
SAKER, OR CHERRUG	61	<i>Galloperdix spadicea</i>	411
SHAHIN	56	spadicea caurina	412
<i>Ficedula parva</i>	313	<i>Gallus sonnerati</i>	412
FINCH, ROSE-	382	Gandam, Kājā Māthānō	379
FLAMINGO	94	Lahōriō	380
LESSER	96	Lāl Māthānō	380
FLORICAN, LESSER	150	Patharāl	378
FLOWERPECKER, THICK-BILLED	374	Gārkhod	195
TICKELL'S OR YELLOW BILLED	438	Nānō	196
FLYCATCHER, BLACK-NAPED	313	Salipūṇchh	194
EASTERN SPOTTED	316	Gariḍ, Dariāi	36
GREY-HEADED	316	Pallas-nō Machhimār	37
INDIAN BROWN	428	Rākhoḍisir Machhimār	38
PARADISE	311	<i>Gelochelidon nilotica nilotica</i>	216
RED-BREASTED	313	Ghaṇṭi Tāṇkṇō or Hūd-Hūd	268
RUFIOUS-TAILED	429	Ghōrād	145
TICKELL'S	314	Ghōyarō, Khākhi, Sirkeer or	138
VERDITER	429	Ghōyarō or Hokkō	137
WHITE-BROWED FANTAIL	318	Ghūvaḍ	243
WHITE-SPOTTED FANTAIL	429	Girnāri	249
FOWL, GREY JUNGLE	412	Machhimār	247
RED SPUR	411	Rāḍiyō	246
FRANCOLIN, BLACK PARTRIDGE OR	411	Gidb	43
COMMON GREY PARTRIDGE OR		Badāmi or Pahāḍi	41
GREY	122	Bhūkhro	42
<i>Francolinus francolinus</i>	411	Rāj	39
<i>pondicerianus</i>	122	Safed, Khōrō or	46
<i>pictus</i>	120	Girjā	117
<i>Fregata andrewsi</i>	454	<i>Glareola pratincola</i>	209
ariel	454	<i>Glaucidium radiatum</i>	418
a. ariel	454	radiatum radiatum	418
a. iredalei	454	GODWIT, BAR-TAILED	186
a. trinitatis	454	BLACK TAILED	185
FRIGATE-BIRD, CHRISTMAS	454	GOOSE, BAR-HEADED	98
FRIGATE-BIRD, GREAT	454	EASTERN GREY LAG	98
LESSER	454	INDIAN PYGMY, COTTON TEAL OR	117
Fūdkī, Dēshi	344	WHITE-FRONTED	408
Ghāni	345	GOSHAWK	18
Kāji Pān	342	GRASS-WARBLER, BRISTLED	430
Kāṇṭāvāli Khad-	430	GREBE, BLACK-NECKED	2
Kāṇṭni	343	GREAT CRESTED	3
Kāṭhiāwāḍi	338	LITTLE, OR DABCHICK	1
Lālbhāni	340	GREENSHANK	189
Rāma	327	<i>Grus antigone antigone</i>	142
Rāpa	430	grus lilfordi	140
Sitā	328	Gūgaḷā	90
Viḍ	341	Gūḷābi	382
<i>Fulica atra atra</i>	159	GULL, BLACK-HEADED	211
Gadērā or Lāmbichānch, Kālipūnchh	185	BROWN-HEADED	212
Paṭṭāpūnchh	186	EASTERN BLACK-BACKED	213
GADWALL	106	GREAT BLACK-HEADED	210

GULL, SLENDER-BILLED	212	<i>Hoplopterus indicus indicus</i>	172
YELLOW-LEGGED HERRING	214	HORNBILL, COMMON GREY	269
<i>Gyps benghalensis</i>	43	HOUBARA, MACQUEEN'S BUSTARD OR	148
<i>fulvus</i>	41	Honbārā or Tīlūr	148
<i>indicus</i>	42	Hūd-Hūd or Ghanṭī Tanṭnō	268
<i>Haematopus ostralegus</i>	169	Hunḡ, Baḡ or	94
<i>Halcyon pileata</i>	420	Nānō, Nānō Baḡ or	96
<i>smeyncensis</i>	263	<i>Hydrophasianus chirurgus</i>	164
<i>Haliaeetus leucogaster</i>	36	<i>Hydroprogne caspia</i>	216
<i>leucoryphus</i>	37	<i>Hypothymis azurea</i>	313
<i>Haliastur indus indus</i>	17	IBIS, GLOSSY	85
Haṃsa, Déva	409	INDIAN BLACK	84
Gāj	98	WHITE	83
Rāj	98	<i>Ibis leucocephalus leucocephalus</i>	88
Shvétabhāl Gāj	408	<i>Ichthyophaga ichthyaetus</i>	38
Harévō,	426	Indrarāj, Kastūrō or	433
Jerdon-nō	425	IORA, CENTRAL INDIAN	303
Hariyāl	228	COMMON	302
Hariyō, Navaranga or	280	MARSHALL'S	304
<i>Harpactes fasciatus</i>	418	<i>Izobrychus cinnamomeus</i>	82
<i>fasciatus legeri</i>	419	<i>sinensis</i>	406
HARRIER, HEN	49	JACANA, BRONZE-WINGED	416
MARSH	50	PHEASANT-TAILED	164
MONTAGU'S	48	JAEGER, ARCTIC SKUA OR PARASITIC	456
PALE	47	LONG-TAILED SKUA OR LONG-	
HAWK, SPARROW	21	TAILED	456
SPARROW-BESRA	405	POMARINE SKUA OR POMARINE	455
HAWK-CUCKOO, COMMON	132	Jaḡ-Haḡ	222
HAWK-EAGLE, CRESTED	25	Jaḡ Kāgdō	5
<i>Hemicircus canente canente</i>	423	Kālō	405
<i>Hemiprocne longipennis coronatus</i>	273	Nānō	4
<i>Hemipus picatus</i>	426	Jaḡ Kūkaḡi	157
HEN-HARRIER	49	Jaḡ Maṇjār,	164
HERON, GREY	68	Kālō	416
INDIAN LITTLE GREEN	71	Jaḡ Mūrghō, Kōrā or	155
INDIAN POND	72	Juggaḡ ♂, Luggaḡ ♀	59
INDIAN REEF	78	Jūmmaḡ, Déahi	32
NIGHT	81	Nānō Tapkivālō	36
PURPLE	70	Pardēshi	30
<i>Hieraaetus fasciatus fasciatus</i>	26	Shāhi	29
<i>pennatus</i>	28	Tapkivālō	34
<i>Himantopus himantopus himantopus</i>	203	Jungli Mūrghō	412
<i>Hippolais caligata</i>	327	<i>Jynx torquilla</i>	279
<i>ecita</i>	328	Kābar,	392
<i>Hirundo concolor</i>	294	Shirāji	394
<i>aurica erythropygia</i>	298	Vana	395
<i>fluvicola</i>	297	Kabūt	68
<i>rupestris</i>	294	Kabūtār or Pārōvūṇ	231
<i>rustica</i>	295	Kāchahārangi	193
<i>smithi filifera</i>	296	Kāgdō,	402
HOBBY,	62	Girnāri	404
INDIAN	63	Kālī Déva	349
Hokkō or Ghōyarō	137	Kalkaliyō,	263
Holī, Loṭana	236	Dhonḡkehānch	419
Nilam	416	Kābarō	260
Shiyālō	232	Vanakhāḡinō	420
Vana	232	Kāṇkaṇasār, Dhoḡi	83
HONEY-BUZZARD, CRESTED	13	Kālī	84
HOOPOE	268		

Pān	85	Lakkāḍ-Khod, Bhārati Nānō	278
Kapāsi	12	Kābarō	276
Karachalā-Khā	165	Kālōpeeth	424
Karohiyā, Dhōḷi-Ankh or	115	Keeḍighar	421
Karkarō	144	Késaripeeth Sonéri	423
Kasiō, Kālā Māthānō	307	Lilō	422
Moṭō	306	Moṭō Kālō	422
Kastūri	351	Shyāmadil	423
Kastūrō or Indrarāj	433	Sonéri	423
Bhūrā Māthānō	432	Lāl-Chānch	113
Malūgir	431	Lalēdō	323
Kathāi-Pānkh, Mor Chakli or	381	Bhārati Piliānkhvālō	321
KESTREL	65	Karamadi	320
Khaḍ Mor	150	Seotimar	326
Khakhēdō	401	Vana	324
Khalili, Nāni	182	Vāpi	320
Vilāyati	183	Lāl-Sir	114
Khapjan	368	Lāmbichānch, Kālīpūnchh Gadērā or	185
Khērō or Safēd Gidh	48	Paṭṭāpūnchh Gadērā or	186
Khétariyō	285	<i>Lanius collurio</i>	372
Khūmri	234	<i>cristatus</i>	373
Kichaḍiyō,	198	<i>excubitor</i>	368
Kālōpēt	199	<i>isabellinus</i>	372
Safēdnēna	201	<i>schach</i>	371
Temminck-nō	198	<i>schach kathiawarensis</i>	371
Kilichō	79	<i>vittatus</i>	370
KING CROW, DRONGO OR	398	LAPWING, RED-WATTLED	172
KINGFISHER, BLACK-CAPPED	420	SOCIABLE	170
BROWN-HEADED STORK-BILLED	419	WHITE-TAILED	171
COMMON	261	YELLOW-WATTLED	173
INDIAN PIED	260	Larji	65
WHITE-BREASTED	263	LARK, ASHY-CROWNED FINCH	284
KITE, BLACK-WINGED	12	BHAVNAGAR'S SAND	288
BRAHMINY	17	DESERT	286
COMMON PARIAN	15	FRANKLIN'S CRESTED	289
LARGE INDIAN OR BLACK-EARED	16	RED-WINGED BUSH	283
Kitkit, Jal	334	RUFIOUS-TAILED FINCH	285
Lilashvālō	335	SHORT-TOED	287
Lilō	336	SINGING BUSH	282
Sādō	335	SYKES' CRESTED	290
KNOT	460	<i>Larus argentatus cachinnans</i>	214
KOEL	135	<i>argentatus heuglini</i>	213
Kōrā or Jal Mūrgḥō	155	<i>brunnicephalus</i>	212
KORA, WATERCOCK OR	155	<i>genei</i>	212
Koshi, Dhōḷā Pētṇō	400	<i>ichthyaetus</i>	210
Kālō	398	<i>ridibundus</i>	211
Rākhoḍi	400	Laṭorō, Rākhoḍi Abābil—	434
Kōyal,	135	Dūdhio or Moṭō	368
Nani Rākhoḍi	414	Kālōpeeth Kābarō	426
Paṭṭāvājī Lāl	413	Kāntnō	305
Kūkanth, Pardēshi	134	Kāthiāwāḍi	371
Kūnj	140	Pachnāk	370
Laggar Falcon	59	Pardēshi	372
Lagoṭhi	261	Rétio	372
Lagōṭhō, Dariāi	197	Lauvā, Pān	205
Lājana	418	Piroji Pān	415
		Lāvāri or Bhāḍakiyūn	127
		Vana, or Vana Bhāḍakiyūn	126
		<i>Leptoptilos dubius</i>	408
		Lilāpug or Ṭimṭimā	189

<i>Limicola falcinellus</i>	201	<i>Motacilla alba dukhunensis</i>	367
<i>Limosa lapponica lapponica</i>	186	<i>cinerea</i>	365
<i>limosa limosa</i>	185	<i>cinerea calcarata</i>	364
<i>Lobipes lobatus</i>	455	<i>citreola citreola</i>	364
<i>Lobipluvya malabaricus</i>	173	<i>feldegg flava</i>	363
<i>Lonehura malabarica</i>	386	<i>feldegg melanogriseus</i>	364
<i>punctulata</i>	388	<i>flava beema</i>	362
<i>Luscinola melanopogon</i>	331	<i>flava thunbergi</i>	362
Luggad ♀ Juggad ♂	59	<i>indica</i>	434
Lühār	106	<i>maderaspatensis</i>	366
Machhimār	66	Motidō	130
Madhiyō	13	Mūniā,	386
MAGPIE-ROBIN, INDIAN	348	Bhārati Tapkāvāli	388
Mahākāg	443	Lāl, Sūrakhi or	441
Mākhimār, Bhārati Rātō	428	Lili	441
Bhūrō	313	MUNIA, GREEN	441
Chatki	313	INDIAN SPOTTED	388
Khākhi	316	RED	441
Lālpūnchh	429	WHITE-THROATED	386
Piroji	429	Mūrgbābi, Baikāl	410
Rākhoḍi Pilō	316	Choṭili Lühār	410
Mālkohā, Nānō Lūlō, or Lūlō Sirkeer	414	Nāni Batak or	108
MALKOHA, SMALL GREEN-BILLED	414	Safēd, Dhōji Batak or	113
MALLARD	103	<i>Muscicapa latirostris</i>	428
MARSH-HARRIER	50	<i>ruficauda</i>	429
MARTIN, CRAG	294	<i>striata neumanni</i>	316
DUSKY CRAG	294	<i>thalassina</i>	429
INDIAN SAND	293	<i>Myiophonus horsfieldi</i>	433
SIBERIAN SAND	293	MYNA, BANK	394
<i>Megalaima haemacephala indica</i>	274	BRAHMINY OR BLACK-HEADED	388
<i>zeylanica</i>	420	COMMON	392
<i>zeylanica viridis</i>	421	GREY-HEADED	442
<i>Melophus lathamii</i>	381	JUNGLE	395
Mēnā, Brāhmaṇi, Babbai or	388	Nāchapa,	318
Pavāi	442	Pahāḍi	429
MERLIN, RED-HEADED	64	Naḍi	70
<i>Merops apiaster</i>	264	Naktā	118
<i>orientalis orientalis</i>	265	Navarāṅga or Hariyō	280
<i>superciliosus persicus</i>	266	<i>Neclarinia asiatica asiatica</i>	375
<i>Melopidius indicus</i>	415	<i>zeylanica</i>	438
<i>Micropternus brachyurus jerdoni</i>	421	Neelkaṇṭh, Dēshi	259
<i>Milvus migrans govinda</i>	15	Kāshmiri	258
<i>migrans lineatus</i>	16	Neelkaṇṭhi	346
MINIVET, DHARMAKUMAR'S SMALL	308	Neol Kūkaḍi	158
INDIAN SHORT-BILLED	428	Neelsir	103
ORANGE	427	<i>Neophron peronopterus ginginianus</i>	46
WHITE-BELLIED	310	<i>Nettapus coromandelianus</i>	117
<i>Mirafr erythroptera</i>	283	<i>Netta rufina</i>	113
<i>erythroptera furva</i>	283	NIGHTJAR, COMMON INDIAN	256
<i>sindiana</i>	283	FRANKLIN'S	255
<i>javanica</i>	282	HUME'S	253
<i>Monticola gularis cinclorhyncha</i>	432	INDIAN JUNGLE	254
<i>solitaria pandoo</i>	352	SYKES'	254
MOORHEN, INDIAN	157	<i>Nittava tickelliae tickelliae</i>	314
PURPLE	158	NUKHTA OR COMB DUCK	118
Mor Chakli or Kathāi-Pāṅkh	381	<i>Numenius arquata arquata</i>	183
Mor ♂ Dhēl ♀	128	<i>arquata lineatus</i>	183
		<i>phaeopus phaeopus</i>	182
		NUTHATCH, CHESTNUT-BELLIED	435
		VELVET-FRONTED	436

<i>Nycticorax nycticorax nycticorax</i>	81	<i>Patti-Pattai</i>	48
<i>Oceanites oceanicus</i>	452	<i>Pavo cristatus</i>	128
<i>o. chilensis</i>	452	PEAFOWL, COMMON	128
<i>o. exasperatus</i>	452	<i>Pelargopsis capensis</i>	419
<i>o. oceanicus</i>	452	<i>Pelecanus onocrotalus</i>	8
<i>wilsoni</i>	452	<i>philippensis</i>	11
<i>Oenanthe deserti</i>	353	PELICAN, DALMATIAN OR GREY	11
<i>atrogularis</i>	354	WHITE OR ROSY	8
<i>isabellina</i>	353	Péna, Chotili	11
<i>oreophila</i>	354	Galabi	8
<i>picata</i>	355	<i>Perdica argoondah</i>	127
<i>picata opistholeuca</i>	432	<i>asiatica</i>	126
<i>xanthopyrma</i>	354	PEREGRINE FALCON	54
ORIOLE, BLACK-HEADED	397	<i>Pericrocotus erythropygius</i>	310
GOLDEN	395	<i>ethologus</i>	428
<i>Oriolus oriolus kundoo</i>	395	<i>flammeus flammeus</i>	427
<i>xanthornus</i>	397	<i>peregrinus dharmakumari</i>	308
<i>Orthotomus sutorius sutorius</i>	337	<i>peregrinus malabaricus</i>	308
OSPREY	66	<i>peregrinus pallidus</i>	308
<i>Otus bakkamoena</i>	243	<i>peregrinus peregrinus</i>	308
<i>brucei</i>	241	<i>Pernis ptilorhynchus ruficollis</i>	13
<i>scops</i>	241	PETREL, WILSON'S STORM	452
<i>scops pulchellus</i>	242	<i>Petronia exanthocollis</i>	382
<i>sunia</i>	241-242	<i>Phaethon aethereus</i>	452
<i>rufipennis</i>	242	<i>a. aethereus</i>	453
OWL, BARN	252	<i>a. indicus</i>	453
BROWN FISH	247	<i>r. erubescens</i>	453
COLLARED SCOPS	243	<i>r. phoenicurus</i>	453
DUSKY HORNED	246	<i>r. melanorhynchus</i>	453
EASTERN SCOPS	242	<i>rubicaudus</i>	453
GREAT HORNED	243	<i>r. rothschildi</i>	453
INDIAN SCOPS	241	<i>r. rubicaudus</i>	453
LARGE MOTTLED WOOD	249	<i>r. westralis</i>	453
SHORT-EARED	250	<i>Phalacrocorax carbo sinensis</i>	5
STRIATED SCOPS	241	<i>fuscicollis</i>	405
OWLET, JUNGLE	418	<i>niger</i>	4
SPOTTED	248	PHALAROPE, NORTHERN OR RED-NECKED	455
OYSTER-CATCHER	169	<i>Philomachus pugnax</i>	202
Pagtičhānoh	111	<i>Phoenicoplerus minor</i>	96
<i>Pandion haliaetus</i>	66	<i>ruber antiquorum</i>	94
PARAKEET, BLOSSOM-HEADED	239	<i>Phoenicurus ochrurus phoenicurusoides</i>	347
INDIAN ROSE-RINGED	237	Phul Chakli,	375
Pārēvūn, Kabūtar or	231	Pachrangi	438
PAROQUET, LARGE INDIAN	417	Phūlrāj	439
PARTRIDGE, BLACK, OR FRANCOLIN	411	Phul Sānghani	374
COMMON GREY, OR FRANCOLIN	122	Pīlchānchvāli	438
PAINTED	120	<i>Phylloscopus collybita</i>	334
<i>Parus major</i>	373	<i>griseolus</i>	335
<i>nuchalis</i>	437	<i>trochiloides nitidus</i>	336
<i>xanthogenys</i>	437	<i>trochiloides viridanus</i>	335
<i>Passer domesticus</i>	383	<i>Picoides mahrattensis</i>	276
PASTOR, ROSY, OR ROSE-COLOURED		<i>nanus</i>	278
STARLING	390	<i>Picus myrmecophoneus</i>	422
Patrangiyō, Nānō	265	Piddō, Kābarō	355
Mōtō	266	Kālō Patharāi	433
Vilāyati	264		
Pattai,	47		
Pān	50		
Vilāyati	49		

Lāl Pūnchh.	354	<i>Prinia buchanani</i>	340
Mēndiō	357	<i>gracilis lepidia</i>	341
Pījō	353	<i>hodgsoni pallidior</i>	338
Rāṇa	353	<i>inornata</i>	344
Shyāmā	356	<i>socialis</i>	342
Stoliczka-nō	355	<i>sylvatica</i>	343
Strickland-nō	432	<i>sylvatica rufescens</i>	343
PIE, TREE	401	<i>Pseudibis papillosa</i>	84
PIGEON, BLUE ROCK	231	<i>Poittacula cyanocephala</i>	239
SOUTHERN GREEN	228	<i>eupatria</i>	417
Pilak,	395	<i>krameri</i>	237
Kālā Māthānō	397	<i>Pterocles exustus erlangeri</i>	223
Pīlakīyō, Bhūrā Māthānō	362	<i>indicus</i>	226
Kālā Māthānō	363	<i>orientalis</i>	225
Pīlā Māthānō	364	<i>aenegallus</i>	224
Rākhoḍi Māthānō	362	<i>Puffinus pernicus</i>	452
Vana	365	Pūlak	287
PINTAIL	109	<i>Pyenonolus haemarrhus pallidus</i>	299
PIPIT, BROWN ROCK	359	<i>jocosus</i>	424
HODGSON'S	361	<i>jocosus abuensis</i>	425
INDIAN	359	<i>jocosus fuscicaudata</i>	425
INDIAN TREE	358	<i>leucogenys leucotis</i>	300
TAWNY	360	<i>luteolus</i>	425
TREE	357	QUAIL, BLACK-BREASTED OR RAIN	125
<i>Pitta brachyura</i>	280	COMMON BUSTARD	163
PITTA, INDIAN	280	COMMON OR GREY	123
Piyāsana	107	INDIAN BUTTON-	162
<i>Platalea leucorodia major</i>	86	JUNGLE BUSH	126
<i>Plegadis falcinellus falcinellus</i>	85	LITTLE BUTTON-	161
<i>Ploceus benghalensis</i>	439	ROCK BUSH-	127
<i>manyar</i>	440	RAIL, INDIAN BLUE-BREASTED	415
<i>philippinus</i>	384	BANDED	
<i>philippinus sardar palei</i>	385	Rājālāl, Dharmakūmārsinphji-nō	308
PLOVER, CRAB	165	Kābarō	310
EASTERN GOLDEN	175	Kēsariyō	427
EUROPEAN LITTLE RINGED	176	Nānichānchvālō	428
GREY	175	Rākhoḍi-Peeth	347
JERDON'S LITTLE RINGED	177	<i>Rallus striatus</i>	415
KENTISH	179	Rāmchakli	373
LARGE SAND	181	Kāhari	437
LESSER SAND	180	Pīji Choṭīli	437
PLOVERS, SEA-SNIPE OR SWIMMING	454	Rāṇa Godhalō	208
<i>Pluvialis dominica fulva</i>	175	Rētāl	207
<i>squatarola squatarola</i>	175	Rātāpug	187
POCHARD, COMMON, OR DUN-BIRD	114	Rākhoḍiyō	186
RED-CRESTED	113	Ravāiḍō	250
TUFTED	117	RAVEN	443
WHITE-EYED	115	<i>Recurvirostra avosetta</i>	205
<i>Podiceps cristatus</i>	3	REDSHANK	187
<i>nigricollis</i>	2	DUSKY	186
<i>ruficollis</i>	1	REDSTART, KASHMIR	347
<i>Pomatorhinus schisticeps horsfieldi</i>	320	REED-WARBLER, BLYTH'S	332
Popaṭ or Sūdō,	237	INDIAN GREAT	333
Rājpiplā-nō	417	Rēvi-Dēvi	252
<i>Porphyrio porphyrio poliocephalus</i>	158	<i>Rhipidura aureola aureola</i>	318
<i>Porzana porzana porzana</i>	154	<i>pectoralis</i>	429
<i>pusilla pusilla</i>	153	<i>Rhyncops albicollis</i>	222
PRATINCOLE	209	<i>Riparia p. chinensis</i>	293
		<i>Riparia riparia diluta</i>	293

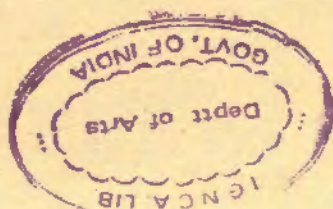
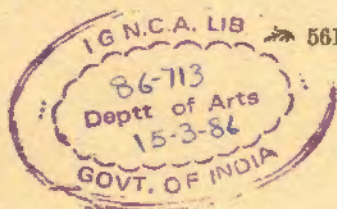
INDEX

ROBIN, INDIAN BROWN-BACKED	349	Shikri ♂, Shikrō ♀	19
INDIAN MAGPIE	348	Shikrō ♀ Shikri ♂	19
ROCK-PIGEON, BLUE	231	Shobingā	302
ROLLER, INDIAN	259	Madhya Bhārati	303
KASHMIR	258	Marshall-nō	304
ROSE-FINCH	382	SHOVELER	111
<i>Rostratula benghalensis benghalensis</i>	205	SHRIKE, ASHY SWALLOW	434
RUFF	202	BAY-BACKED	370
SAKER FALCON	61	BLACK-BACKED PIED	426
<i>Salpornis spilonotus</i>	435	BLACK-HEADED CUCKOO	307
Samaji or Cheel	15	COMMON WOOD	305
Shitān, Kāshmiri Cheel or	16	INDIAN GREY	368
SANDERLING	197	LARGE INDIAN CUCKOO	306
SANDGROUSE, COMMON INDIAN	223	MALABAR WOOD	305
IMPERIAL OR LARGE BLACK-		PALE-BROWN	372
BELLIED	225	RED-BACKED	372
PAINTED	226	RUFIOUS-BACKED	371
SPOTTED	224	Shvēta Kanṭha, Bhārati	331
SANDPIPER, BROAD-BILLED	201	Bhārati Nānō	328
COMMON	192	Moṭō	329
CURLEW	200	Shyāmā,	431
GREEN	190	Pāṇḍū	352
MARSH	188	Singpar	109
WESTERN TEREK	191	Sirkeer or Khākhi Ghōyarō,	138
WOOD	191	Lilō, Nānō Lilō Mālkohā or	414
Sānāgar	26	<i>Sitta europaea</i>	435
Pardēshi	28	<i>frontalis</i>	436
Santā-Kūkaḍi, Baillon-ni	153	SKIMMER, INDIAN	222
Taphkhirī, Nāni Davāk or	154	SKUA, GREAT	455, 456
Tapkiḍi	154	SKYLARK, SMALL	292
Sāpmār	51	SNAKE BIRD, INDIAN DARTER OR	7
Chotāliyō	52	SNIPE, COMMON OR FANTAIL	195
Sāras	142	JACK	196
<i>Sarkidiornis melanotos</i>	118	PAINTED	205
Sarpagreeva	7	PINTAIL	194
<i>Saxicola caprata bicolor</i>	356	SPARROW, HOUSE	383
<i>macrorhyncha</i>	355	YELLOW-THROATED	382
<i>torquata indica</i>	357	SPARROW-HAWK,	21
<i>Saxicoloides fulicata cambaiensis</i>	349	BESRA	405
SCAUP	116	<i>Spilornis cheela</i>	52
<i>Scolopax rusticola</i>	416	<i>Spizaetus cirrhatus</i>	25
SEA-SNIPE, OR SWIMMING PLOVERS	454	SPOONBILL, INDIAN	86
SEDGE-WARBLER, EASTERN		SPOTBILL OR GREY DUCK	105
MOUSTACHED	331	STARLING	392
SHAG, INDIAN	405	ROSE-COLOURED, ROSY PASTOR	
Shāhinchā ♂, Shāhin ♀	56	OR	390
Shāhin, Lāl Māthāni	58	<i>Stercorarius buffoni</i>	458
Shāhin ♀ Shāhinchā ♂	56	<i>crepidatus</i>	456
SHAHIN FALCON	56	<i>longicaudus</i>	456
SHAHIN, RED-HEADED	53	<i>parasiticus</i>	456
SHAMA	431	<i>pomatorhinus</i>	455
SHELD-DUCK,	101	<i>Sterna albifrons</i>	221
RUDDY, OR BRAHMINY DUCK	101	<i>albifrons saundersi</i>	221
SHEARWATER, FLUTTERING	452	<i>aurantia</i>	217
PERSIAN	452	<i>bengalensis</i>	456
Shérāḍi	322	<i>bergi</i>	222
SHIKRA	19	<i>hirundo</i>	219
		<i>melanogaster</i>	220

STILT, BLACK-WINGED	203	COTTON, OR INDIAN PYGMY	
STINT, LITTLE	198	GOOSE	117
TEMMINCK'S	198	GARGANEY	110
STORK, ADJUTANT	408	LARGE WHISTLING	409
BLACK	407	LESSER OR COMMON WHISTLING	99
BLACK-NECKED	93	MARbled	113
OPENBILL	90	Teesō	24
PAINTED	88	Himālaya	23
WHITE	91	Mōsami	22
WHITE-NECKED	91	Rapa	24
<i>Streptopelia chinensis suralensis</i>	232	Téjpur	209
<i>decaocto decaocto</i>	235	<i>Tephrodornis gularis sylvicola</i>	305
<i>orientalis</i>	232	<i>pondicerianus</i>	305
<i>senegalensis cambayensis</i>	234	TERN, BLACK-BELLIED	220
<i>tranquebarica tranquebarica</i>	236	CASPIAN	216
<i>Striz ocellata grandis</i>	249	COMMON	219
<i>ocellata ocellata</i>	250	GULL-BILLED	216
<i>Sturnus malabarica</i>	442	INDIAN RIVER	217
<i>pagodarum</i>	388	INDIAN WHISKERED	214
<i>roseus</i>	390	LESSER CRESTED	456
<i>vulgaris</i>	392	RED SEA CRESTED	222
<i>vulgaris pollartatzskii</i>	392	WHITE-WINGED BLACK	215
Sūdō, Popaṭ or	237	TERNLET	221
Sūghari,	384	<i>Terpsiphone paradisi leucogaster</i>	312
Kālāgalāni	439	<i>paradisi paradisi</i>	311
Liṭṭivāli	440	Tétar, Kālō	411
SUNBIRD, PURPLE	376	Khadyō	122
PURPLE-RUMPED	438	Taliyō	120
VIGOR'S YELLOW-BACKED	439	Thaḍ-Chaḍ, Rākhoḍi	435
Sūrakh or Lāl Mūniā	441	Thaḍ-Raṅga	279
Sūrkhab, Brāhmaṇi Batak or	101	Thartharō, Kāshmiri	347
Saféd	101	<i>Threskiornis melanocephalus</i>	83
SWALLOW, COMMON	295	THRUSH, BLUE-HEADED ROCK	432
INDIAN CLIFF	297	BLUE ROCK	352
SYKES' STRIATED OR RED-		MALABAR WHISTLING	433
RUMPED	298	WHITE-THROATED GROUND	431
WIRE-TAILED	296	Tikṭiki, Blyth-nō Pān	332
SWALLOW-SHRIKE, ASHY	434	Kamodnō	333
SWAN, ALPHERAKY'S	409	Pān	333
SWIFT, ALPINE	270	Shvétanēṇa Pān	331
INDIAN CRESTED	273	Tiliyō	202
INDIAN HOUSE	271	Tilūr, Houbārā or	148
WESTERN PALM	272	Timtimā, Lilāpug or	189
<i>Sylvia communis icterops</i>	331	TIT, GREY	373
<i>curruca affinis</i>	328	WHITE-WINGED BLACK	437
<i>curruca minuta</i>	329	YELLOW-CHEEKED	437
<i>hortensis crassirostris</i>	329	Tiṭoḍi	172
<i>nana</i>	430	Bāṭaṇa	175
<i>Taccocua leschenaulti</i>	138	Jerḍon-ni Jini	177
<i>viridirostris</i>	414	Maltāvḍi	170
<i>Tadorna ferruginea</i>	101	Nāni Rétāḷ	180
<i>tadorna</i>	101	Pārsana	173
TAILORBIRD	337	Rétāḷ	181
Tarwāriō, Dūdhbrāj or	311	Saféd Pūṇchhi	171
Tāshkō or Darjiḍō	337	Sonéri Bāṭaṇa	175
TEAL, BRONZE-CAPPED OR FALCATED	410	Vilāyati Jini	176
CLUCKING OR BAIKAL	410	<i>Tockus birostris</i>	269
COMMON	108	<i>Torgos calvus</i>	39
		TREE-WARBLER, BOOTED	328
		OLIVACEOUS	335

INDEX

SYKES'	327	WARBLER, ASHY WREN	342
<i>Treron phoenicoptera chlorigaster</i>	228	BLYTH'S REED	332
<i>Tringa cinerea cinerea</i>	191	BOOTED TREE	328
<i>erythropus</i>	186	BRISTLED GRASS	430
<i>glareola</i>	191	DESERT	430
<i>nebularia</i>	189	EASTERN MOUSTACHED SEDGE	331
<i>ochropus</i>	190	EASTERN ORPHEAN	329
<i>stagnatilis</i>	188	GREENISH WILLOW	335
<i>totanus</i>	187	GREEN WILLOW	336
TROGON, MALABAR	418	GREY-BACKED	347
TROPIC-BIRD, RED-BILLED	452	INDIAN GREAT REED	333
RED-TAILED	453	INDIAN WREN	344
Tūi	239	JUNGLE WREN	343
Tūktūkiyō	274	KATHIAWAR WREN	338
Lilō	420	OLIVACEOUS TREE	335
Tūl, Kāji	91	PADDY-FIELD	333
<i>Turdoides caudata caudata</i>	322	RUFIOUS-FRONTED WREN	340
<i>malcolmi</i>	323	STREAKED FANTAIL	345
<i>somervillei</i>	324	STREAKED WREN	341
<i>Turdus citrinus cyanotus</i>	431	SYKES' TREE	327
<i>merula nigropileus</i>	351	WATERCOCK OR KORA	155
<i>Turnix suscitator taigoor</i>	163	WATER HEN, WHITE-BREASTED	156
<i>sylvatica dussumieri</i>	161	WEAVER BIRD, BAYA OR	384
<i>tanki tanki</i>	162	BLACK-THROATED	439
TURNSTONE	193	STREAKED	440
Tūrūmti ♀ Chatvā ♂	64	WHEATEAR, DESERT, DESERT CHAT	353
Tutvāri or Chanchāl	191	OR	182
Gaṇḍāpug	188	WHIMBREL	377
Lili	190	KATHIAWAR	317
Sāmānya	192	WHITETHROAT, INDIAN	331
Vana	191	INDIAN LESSER	328
<i>Tyto alba</i>	252	SMALL	329
Ūjaḷi	91	WIGEON	107
Ūlṭi-Chānch	205	WOODCOCK	416
<i>Upupa epops</i>	268	WOODPECKER, BLACK-BACKED	424
Vaiyō	390	GOLDEN-BACKED	275
Kāḷō	392	GREAT BLACK	422
Vana Chor	416	HEART-SPOTTED	423
Vana Ghōḷō	434	INDIAN PYGMY	278
Vāṇkichānch	200	MALHERBE'S GOLDEN-BACKED	423
VULTURE, BLACK OR KING	39	SCALY-BELLIED GREEN	422
CINEREOUS	41	SOUTHERN RUFIOUS	421
COMMON OR WHITE-BACKED	43	YELLOW-FRONTED PIED	276
FULVOUS OR GRIFFON	41	WREN-WARBLER, ASHY	342
LONG-BILLED	42	FRANKLIN'S	339
NEOPHRON OR WHITE SCAVEN-	46	INDIAN	344
GER	46	JUNGLE	343
WAGTAIL, BLACK-HEADED	363	KATHIAWAR	338
BLUE-HEADED	362	RUFIOUS-FRONTED	340
EASTERN GREY	365	STREAKED	341
FOREST	434	WRYNECK	279
GREY-HEADED YELLOW	362	<i>Xenorhynchus asiaticus asiaticus</i>	93
HODGSON'S YELLOW-HEADED	364	Zād-Chaḍ, Kathāipēt	435
INDIAN WHITE	367	Makhmali	436
PIED	366	<i>Zosterops palpebrosa</i>	377
YELLOW-HEADED	364	<i>palpebrosa amabilis</i>	377
Wāk, Awāk or	81	<i>palpebrosa egregaria</i>	377
Waku-Waku	224	<i>palpebrosa occidentis</i>	377
WARBLER, ABU JUNGLE WREN	343	Zūrrā ♂, Bāz ♀	18

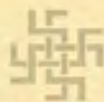


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